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DEPARTMENT OF HEALTH SERVICES

TOXIC SUBSTANCES CONTROL PROGRAM

ON 4

245 WEST BROADWAY, SUITE 350

LONG BEACH, CA 90802

(213) 590-4868

MAY 23 1990



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TO: Final Permit Mailing List


SUBJECT: FINAL HAZARDOUS WASTE FACILITY PERMIT: LONG BEACH NAVAL SHIPYARD,
(EPA ID NO. CA6170023109)

Enclosed, please find the Final Hazardous Waste Facility Permit issued to the Long Beach Naval Shipyard.

The permit authorizes the facility at Building 314 to operate under certain specified conditions. It is granted by the California Department of Health Services in accordance with Title 22 of the California Code of Regulations (22 CCR), Chapter 30.

Questions regarding this final permit should be directed to Joe J. Zarnoch of my staff at (213) 590-4872.

Sincerely,


Mohinder S. Sandhu, P.E., Chief
Facility Permitting Unit

Enclosure

cc: Final Permit Mailing List

LONG BEACH NAVAL SHIPYARD
FINAL PERMIT MAILING LIST

Jim Breitlow, Chief
Permits Section
U. S. Environmental Protection Agency
Region IX
1235 Mission Street, H-3-2
San Francisco, CA 94103

Paul Blais, Chief
Hazardous Waste Management Section
Department of Health Services
Toxic Substances Control Program
714/744 P Street
P.O. Box 942732
Sacramento, CA 94234-7320

John A. Hinton
Regional Administrator
Department of Health Services
Toxic Substances Control Program
Region 4
245 W. Broadway, Suite 350
Long Beach, CA 90802

Dave Bailey, Code 410
Director, Environmental Protection
Long Beach Naval Shipyard
Terminal Island Complex
Long Beach, CA 90822-5099

Captain L.D. Johnson
Shipyard Commander
Long Beach Naval Shipyard
Terminal Island Complex
Long Beach, CA 90822-5099

Don Cillay
Health Officer
City of Long Beach
Environmental Health Department
P.O. Box 6157
2655 Pine Avenue
Long Beach, CA 90806

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Captain Richard McIntyre
Bureau of Fire Prevention
City of Long Beach Fire Department
400 W. Broadway, Room 264
Long Beach, CA 90802

Robert Paternoster
Director of Planning & Building
City of Long Beach
333 W. Ocean Blvd., 4th Floor
Long Beach, CA 90802

James C. Hankla
City Manager, City of Long Beach
333 W. Ocean Blvd., 13th Floor
Long Beach, CA 90802

Raymond Holland
Director of Public Works, City of Long Beach
333 W. Ocean Blvd., 9th Floor
Long Beach, CA 90802

Frank Wada
Plant Manager, Terminal Island Treatment Plant
445 Ferry Street
San Pedro, CA 90731

Deane Dana
4th District Supervisor
County of Los Angeles
500 W. Temple, Room 822
Los Angeles, CA 90012

Mike Czap
South Coast Air Quality Management District
145 Victoria Street
Long Beach, CA 90805

Regional Water Quality Control Board
Region 4
101 Center Plaza Road
Monterey Park, CA 91754

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Paula Rasmussen, Chief
Surveillance and Enforcement Unit
Department of Health Services
Toxic Substances Control Program
Region 4
245 W. Broadway, Suite 350
Long Beach, CA 90802

Vincent Nafarette
Toxics Legal Office
Department of Health Services
Toxic Substances Control Program
Region 4
245 W. Broadway, Suite 350
Long Beach, CA 90802

DEPARTMENT OF HEALTH SERVICES

TOXIC SUBSTANCES CONTROL PROGRAM

REGION 4

245 WEST BROADWAY, SUITE 350

LONG BEACH, CA 90802

(213) 590-4868



Facility: Long Beach Naval Shipyard) HAZARDOUS WASTE FACILITY PERMIT
Long Beach, CA 90822-5099)
EPA ID Number: CA6170023109
Operator: Long Beach Naval Shipyard)
Long Beach, CA 90822-5099)
Effective Date: May 1, 1990
Expiration Date: May 1, 1995

Pursuant to Section 25200 of the California Health and Safety Code, this Hazardous Waste Facility Permit is hereby issued to the Long Beach Naval Shipyard. The issuance of this permit is subject to the conditions set forth in Attachment A which consists of 77 pages.


John A. Hinton, P.E.
Regional Administrator

5/1/90
Date

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ATTACHMENT A

Hazardous Waste Facility Permit

Long Beach Naval Shipyard
Long Beach, California 90822-5099
EPA ID No.: CA6170023109

I. DESCRIPTION OF FACILITY

A. Ownership, Operations, and Location

The Long Beach Naval Shipyard (LBNS), hereinafter referred to as the "owner" and/or "operator", has applied to the California State Department of Health Services (DHS) for a Hazardous Waste Facility Permit to authorize the operation of a new hazardous waste storage facility located at Building 314, Long Beach Naval Shipyard, Long Beach (Los Angeles County), California.

The Building 314 facility will be used to receive, handle and store hazardous wastes (in containers) generated on-site at the Long Beach Naval Complex. In addition, Building 314 will receive off-site generated wastes from the Naval Hospital, 7500 E. Carson Street, Long Beach, CA and from Naval ships located at the Southwest Marine Repair Facility, Terminal Island, San Pedro, CA. There will be no treatment or disposal of hazardous wastes at the facility; hazardous wastes will be stored in containers prior to transport to a permitted disposal or recycling facility.

The facility consists of a metal storage building, approximately 9,350 square feet, containing eight storage bays (in Room 105). Each bay is approximately 19 feet by 30 feet and enclosed on three sides by an 8-inch high concrete berm; the remaining side is open to the center drive-through area, however, the 6-inch concrete floor of each bay is sloped towards a center sump. Two additional storage rooms are designed for water reactive wastes (Room 106, 19 feet by 22 feet) and PCBs (Room 107, 18 feet by 25 feet). Loading facilities consist of a concrete pad (45 feet by 50 feet) equipped with a sump. The new facility is located within a secure fenced area (394 feet by 172 feet).

The facility has a maximum total storage capacity of 672 55-gallon drums: a maximum of 72 in each of the eight bays of Room 105, 48 in Room 106 and 48 in Room 107. The maximum number of containers is based on single stacking.

An area for storing and crushing empty hazardous waste containers is located outside and east of Building 314.

Wastes at the facility will be stored mainly in 55 (DOT 17E and 17H) or 30 (DOT 17E and 17H) gallon containers. Over-sized containers (DOT E-9618) with capacities of 85 gallons will be used occasionally to contain damaged 55-gallon containers.

The facility is permitted to store the following hazardous wastes:

<u>Hazardous Waste</u>	<u>Monthly Quantity (tons)</u>
Absorbant/oils	1.25
Absorbant/paints	0.33
Adhesives	0.33
Antifreeze solution	0.33
Batteries	0.21
Chloroform	0.17
Chronic acid	4.17
Cleaning compounds	13.67
Coal tar distillates	0.25
Crushed containers	3.92
Grease	1.25
Hydrochloric acid	0.25
Mercuric nitrate	0.50
Methyl ethyl ketone	0.17
Naphtha	0.75
Paint	10.67
PCBs	2.90*
Pesticides	0.42
Petroleum oil	0.50
Solvents	5.90
Thinner	0.50
Tributyl tin oxide	0.33
Tricresyl phosphate/hydro fluid	2.42
Xylene	0.01
1,1,1-Trichloroethane	0.58
Miscellaneous	0.83

* quantity includes weight of equipment

B. Compliance With California Environmental Quality Act (CEQA)

DHS has prepared a negative declaration in accordance with the California Environmental Quality Act (Public Resources Code, Section 2100, et. seq.) and the State guidelines. DHS has determined that this particular project will not have a significant deleterious effect on the environment. DHS certified this negative declaration on May 1, 1990.

II. GENERAL CONDITIONS

A. References and Terminology

All sections in this permit are identified by Roman numerals. The items set forth in each part shall apply to the owner, operator, and/or facility in addition to the items set forth in any preceding and/or following section of this permit. Unless explicitly stated otherwise, all cross-references to items in this permit shall refer only to items occurring within the same section.

B. Effect of Permit

1. Issuance of this permit by DHS does not release the owner or operator from any liability or duty imposed by federal or state statutes and regulations or local ordinances, except the obligation to obtain this permit. In particular, unless otherwise specifically provided in this permit, the owner or operator shall comply with the provisions of Chapter 6.5 of Division 20 of the Health and Safety (H&S) Code, and Title 22, CCR, Division 4, Chapter 30.
2. Issuance of this permit by DHS does not prevent DHS from adopting or amending regulations, issuing administrative orders, or obtaining judicial orders which impose requirements which are in addition to, or more stringent than those in existence at the time this permit was issued. The owner or operator shall comply with any such additional or more stringent requirements, in addition to the requirements and conditions specified in the permit.
3. Issuance of this permit by DHS does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property or any invasion of other private rights.
4. The owner or operator is permitted to store hazardous waste in accordance with the conditions of this permit. The owner or operator shall perform the hazardous waste management activity authorized by this permit in accordance with the plans and specifications approved by DHS. Any management of hazardous waste not authorized in this permit is prohibited.

C. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause as specified in Sections 66382, 66383, and 66385, Title 22, CCR. A new facility permit condition or a modification of an existing facility permit condition shall become effective on the date that written notice of such change is received by the owner or operator. The filing of a request for a permit modification, revocation and reissuance, or termination or the modification of planned changes or anticipated noncompliance on any

part of the owner or operator, does not stay the applicability or enforceability of any permit condition.

D. Need to Halt or Reduce Activity

In an enforcement action, an owner or operator shall not use the defense that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

E. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

F. Part B of the Hazardous Waste Facility Permit Application

1. By the issuance of the permit, the Part B dated September 18, 1989 is hereby approved. This Part B and any subsequent revisions thereof, subject to the approval of DHS, are by this reference made part of this permit. Specific sections of this Part B are referenced elsewhere in this permit.
2. The owner or operator shall operate and maintain the facility in accordance with the Part B.
3. In the event of any conflict between this permit and the Part B reference herein, the provisions of the permit shall be controlling.
4. The Part B shall be maintained at the facility and place of business at all times until closure is completed.

G. General Responsibilities of Operator

1. Compliance

- a. The owner or operator shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit or approved by DHS. Any permit noncompliance constitutes grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

- b. The owner or operator shall comply with all laws, regulations, permits, zoning conditions, and all other requirements established by federal, state, and local agencies.

2. Reapplication

If the owner or operator wishes to continue an activity regulated by this permit after the expiration date of this permit, the owner or operator must submit a completed application for a new permit at least one hundred and eighty (180) calendar days before this permit expires.

3. Permit Expiration

This permit and all conditions therein will remain in effect beyond the permit expiration or termination date if the owner or operator has submitted a timely, completed application and, through no fault of the owner or operator, DHS has not issued a new permit.

4. Transfer of Permit

This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to Section 66382(b)(2) or 66385(d), Title 22, CCR. The owner or operator shall notify DHS of a proposed change in ownership of this facility at least 30 days prior to the date of the transfer. Furthermore, before transferring ownership or operation of the facility during its operating life, the owner or operator shall notify the new owner or operator in writing of the requirements of this permit and the permitting process. A copy of this notification shall be submitted to DHS.

5. Mitigation

The owner or operator shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Operation and Maintenance

- a. The facility shall be maintained at all times and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or unsudden release of hazardous waste or hazardous waste constituents to air, soil, surface water, or ground water which could threaten human health or the environment.

- b. All equipment, pipes, and lines used at the facility to handle, transfer, pump, or store hazardous wastes shall be maintained in a manner that prevents the leaking and spilling of hazardous wastes.
- c. The owner or operator shall at all times properly operate and maintain all facilities (and related appurtenances) which are installed or used by the owner or operator to achieve compliance with the conditions of this permit. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of a backup or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of the permit.

7. Submittal of Requested Information

The owner or operator shall furnish DHS, within a reasonable time, any relevant information which DHS may request to determine whether cause exists for modifying, revoking and reissuing, terminating this permit, or to determine compliance with this permit. The owner or operator shall also furnish to DHS, upon request, copies of records required to be kept by this permit. For the purpose of this condition only, "within reasonable time" means sixty (60) calendar days from the date the owner or operator receives the information request from DHS.

8. Hazardous Waste List

- a. The owner or operator shall maintain a current list of hazardous wastes that can be accepted by the facility. The owner or operator shall, as necessary, update the hazardous waste list presented in the approved Part B. Any additions to the list must be approved by DHS prior to their inclusion.
- b. Accumulation stations, since they have variable inventories, can handle all wastes except those prohibited in item III.B.

9. Inspection and Entry

The owner or operator shall allow authorized representatives of DHS, the State Water Resources Control Board, a Regional Water Quality Control Board, or the local health agency, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the owner's or operator's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or, as otherwise authorized by law, any substances or parameters at any location.

10. Planned Changes

The owner or operator shall obtain approval from DHS as soon as possible and at least 30 days in advance of any planned physical alterations or additions affecting operation of the hazardous waste area of the permitted facility.

11. Anticipated Noncompliance

The owner or operator shall give advance notice to DHS of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The owner or operator shall report to the California Office of Emergency Services (800) 852-7550 any circumstances that may endanger public health or the environment immediately upon becoming aware of the incident.

12. Twenty-four (24) Hour Reporting

The owner or operator shall report to DHS any noncompliance which may endanger health or the environment. Any information shall be provided verbally within 24 hours from the time the owner or operator becomes aware of the noncompliance. The following shall be included as information which must be reported verbally within 24 hours to DHS, Toxic Substances Control Program, Region 4, Long Beach at (213) 590-4868.

- a. Information concerning a release of any hazardous waste which may cause an endangerment to public drinking water supplies.
- b. Information concerning any release or discharge of hazardous waste, or of fire or explosion from the facility, which could threaten human health or the environment outside the facility. The description of the occurrence and its cause shall include:
 - (1) Name, address, and telephone number of the owner or operator;
 - (2) Name, address, and telephone number of the facility;
 - (3) Date, time, and type of incident;
 - (4) Name and quantity of material(s) involved;
 - (5) The extent of injuries, if any;
 - (6) An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
 - (7) Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided within fifteen (15) calendar days of the time the owner or operator becomes aware of the circumstances. The written submission shall contain: a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times) and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

13. Other Noncompliance

The owner or operator shall report all other instances of noncompliance, not otherwise required to be reported, at the time monitoring or other reports are submitted. The reports shall contain the information listed in II.G.12 above.

14. Other Information

The owner or operator shall promptly submit all facts or information (including corrected information) which have been omitted in the permit application or any other report submitted to DHS.

H. Signatory Requirement

All reports or other information requested by DHS shall be signed by the owner or operator. For a federal facility, this would be a responsible executive officer or ranking official. The person signing the document shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

I. Certification of Construction

The owner or operator may not commence storage or transfer of hazardous wastes at the facility or modified portion of the facility until:

1. The owner or operator has submitted to DHS by certified mail or hand delivery a letter signed by the owner or operator and an appropriate engineer (registered in California) stating that the facility has been constructed in compliance with the permit; and
2. DHS has inspected the constructed facility and finds it is in compliance with the conditions of the permit; or

3. DHS has either waived the inspection or has not within fifteen (15) calendar days notified the owner or operator of its intent to inspect.

J. Waste Minimization Certification

The owner or operator shall retain original signed copies for at least three (3) years from the date of certification of the following statement on waste minimization:

"I hereby certify under penalty of law that personnel under my direction and supervision at this facility are undertaking specific steps in accordance with a program in place to minimize the amount and toxicity of hazardous wastes generated at this facility to a degree economically practicable and that the method utilized for the treatment, storage, or disposal of hazardous wastes is the practicable method currently available to this facility which minimizes the present and future threat to human health and the environment. I am aware that there are significant penalties for false certification, including the possibility of fine and imprisonment for flagrant falsifications."

The owner or operator shall make this certification at least annually and shall retain these copies as part of the facility's written operating record as required in conditions III.P.2.a (8) and III.P.3.a of this permit.

III. SPECIAL CONDITIONS

A. Prohibition of Disposal

Hazardous wastes shall not be permanently disposed of at the facility unless such disposal is properly permitted.

B. Wastes Prohibited

Hazardous wastes described below shall not be handled at the facility:

1. Extremely hazardous wastes as defined in Sections 66720 and 66723, Title 22, CCR, unless specifically approved by DHS;
2. Forbidden and Class A explosives as defined in Sections 173.51 and 173.53, Title 49, CFR;

3. Any hazardous waste not listed in the approved Part B or otherwise approved by DHS; and
4. Any hazardous waste generated outside the premises of the facility at a location not identified in the Part B.

C. Storage Conditions

1. Storage in Containers

- a. Containers holding hazardous wastes shall be stored only in the area designated in the approved Part B.
- b. A container holding hazardous waste shall remain closed during storage, except when it is necessary to add or remove waste.
- c. A container holding hazardous waste shall not be handled or stored in a manner which might rupture the container or cause it to leak.
- d. A label shall be maintained on all containers in which hazardous wastes are stored. Labels shall include the following information:
 - (1) Composition and physical state of the waste;
 - (2) Special safety recommendations and precautions for handling the waste;
 - (3) Statement or statements which call attention to the particular hazardous properties of the waste;
 - (4) Name and address of the facility producing the waste; and
 - (5) Date accumulation begins or date of acceptance at the storage facility.
- e. Empty containers contaminated with hazardous waste and hazardous materials shall be stored, handled, and processed as hazardous waste or recycled whenever possible.
- f. The total number of containers storing hazardous waste in the storage area shall not exceed the designed capacity of the storage area at any one time.

- g. Containers used for storing hazardous waste shall be in a condition such that the containers can be safely transported, handled, or moved.
- h. If a container holding hazardous waste is not in good condition, or if it begins to leak, the owner or operator shall transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the conditions of this permit.
- i. Compatibility of Waste With Containers

The owner or operator shall use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

j. Containment

- (1) For all containment areas the owner or operator shall provide a spill containment system in accordance with the approved Part B. Specifically, the hazardous waste storage area shall have a continuous base that is impervious to the waste stored and shall be designed and constructed so that any spills can be contained.
- (2) In addition to the requirements of item (1) above, the containment system shall be constructed so that surface waste runoff is contained and surface water run-on is excluded. The containment system shall have sufficient capacity to contain ten percent of the volume of containers or the volume of the largest containers, whichever is greater. Outdoor containment areas must also contain precipitation from a 24-hour, 25-year storm.
- (3) Spills, leaks, and precipitation shall be promptly removed from the containment area to prevent overflow.

k. Polychlorinated Biphenyl (PCB) Wastes

Containers holding PCBs or devices containing PCB wastes shall comply with the current applicable requirements of Part 761, Title 40, CFR.

D. Management of Ignitable, Reactive, or Incompatible Wastes

1. The storage of ignitable, reactive, or incompatible wastes and materials shall be conducted so that it does not:
 - a. Generate extreme heat or pressure, fire or explosion, or violent reaction;
 - b. Produce uncontrolled toxic mists, fumes, dust, or gases in sufficient quantities to threaten human health or the environment;
 - c. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
 - d. Damage the structural integrity of the device or facility containing the waste; or
 - e. Through other like means threaten human health or the environment.
2. The treatment and disposal of hazardous waste on-site shall be prohibited.
3. Ignitable or Reactive Waste
 - a. The owner or operator shall take precautions to prevent accidental ignition of ignitable wastes or reaction of reactive wastes. This waste shall be separated and protected from sources of ignition or reaction. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designed locations. "No Smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.
 - b. Each container holding ignitable or reactive waste shall be situated at least 15 meters (50 feet) from the property line of the facility.
 - c. Ignitable or reactive waste shall not be placed in a container for storage unless:

- (1) The waste is treated, rendered, or mixed before or immediately after placement in the container so that the resulting waste, mixture, or dissolution of materials is no longer ignitable or reactive and item III.D.1 of this permit is complied with;
- (2) This waste is stored in such a way that it is protected from any material or condition which may cause the waste to ignite or react; or
- (3) The container is used solely for emergencies.

4. Incompatible Wastes

- a. Hazardous waste shall not be placed in an unwashed container that previously held an incompatible waste or material.
- b. Areas used for storing containers of incompatible hazardous waste shall be widely separated. Impermeable physical barriers such as berms, dikes, or walls shall be provided to ensure that commingling of incompatible hazardous wastes cannot occur.
- c. The following incompatible hazardous waste groups shall be adequately separated from each other during all handling and storage operations:

Examples:

- (1) Cyanides shall be separated from acids.
- (2) Organics acids shall be separated from toxics.
- (3) Reactive toxic metals shall be separated from water.

E. Operation at Night

If the facility is operated during hours of darkness, the owner or operator shall provide sufficient lighting to ensure safe, effective management of hazardous wastes.

F. Recycling

If requested by DHS, in accordance with Article 12, Chapter 30, Division 4, Title 22, OCR, the owner or operator shall, within thirty (30) calendar days, submit a written statement justifying having not recycled a waste which DHS has determined to be recyclable.

G. Manifest System

1. The owner or operator shall:

- a. Complete the appropriate section of the manifest;
- b. Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;
- c. Note any significant discrepancies in the manifest on each copy of the manifest;
- d. Immediately give the transporter at least one copy of the signed manifest;
- e. Send legible copies of all completed hazardous waste manifests to DHS on a monthly basis in conformance with Section 67168, Title 22, OCR;
- f. Within thirty (30) calendar days after delivery, send a copy of the manifest to the generator;
- g. Retain at the facility a copy of each manifest for at least three (3) years from the date of delivery;
- h. Submit to DHS by the last day of each month, information on the hazardous waste delivered during the previous month, consisting of a legible copy of the completed manifest for each load of accepted hazardous wastes and a report that summarizes the numbers of loads of hazardous wastes received.

2. Manifest Discrepancies

a. Significant Discrepancies

- (1) Upon discovering a significant discrepancy between the quantity or type of hazardous waste designated on the manifest and the quantity or type of hazardous waste the facility actually receives, the owner or operator shall attempt to reconcile the discrepancy with the waste generator or transporter.
- (2) Significant discrepancies in quantity are:
 - (a) For bulk waste, variations greater than ten percent in weight; and
 - (b) For batch waste, any variation in piece count such as a discrepancy of one drum in a truckload.
- (3) Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent for waste acid or toxic constituents not reported on the manifest.

- b. If the facility cannot legally accept the waste, the owner or operator shall immediately notify DHS of that fact, identify the transporter and generator of the waste, and refuse to accept the waste. If the owner or operator can accept the waste, the owner or operator shall note how the discrepancy was resolved on the copy of the manifest submitted to DHS and on the copy retained at the facility. If the discrepancy is not resolved within fifteen (15) calendar days after receiving the waste, the owner or operator shall immediately submit to DHS a letter describing the discrepancy and attempts to reconcile it and a copy of the manifest at issue.

3. Unmanifested Wastes Received or Rejected

When the facility receives or rejects an unmanifested load of hazardous waste, the owner or operator shall prepare and submit a report to DHS within fifteen (15) calendar days. The report shall include the following information:

- a. The EPA identification number, name, and address of the facility receiving or rejecting the waste;

- b. The date the facility received or rejected the waste;
- c. The EPA identification number, name, and address of the generator and the transporter who transported the waste;
- d. The license number of the vehicles used to transport the waste. This shall include the license number of the tractor, as well as the trailers, if appropriate;
- e. A description and quantity of the received or rejected load of hazardous waste;
- f. For waste received, the method of storage for each hazardous waste;
- g. If rejected, a brief explanation of why the waste was rejected;
- h. A brief explanation of why the waste was unmanifested, if known; and
- i. A certification as required by item II.H of this permit.

4. Uncertified Hauler

The owner or operator shall notify DHS in writing within fifteen (15) calendar days when the facility receives any hazardous waste from an uncertified hauler or if the facility receives a hazardous waste that was transported in a vehicle or container failing to display a valid certificate of compliance.

H. Required Notice

- 1. When the owner or operator receives hazardous waste from an off-site source, the owner or operator must inform the generator in writing that the facility has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

I. Analysis of Waste

- 1. Upon the effective date of this permit, the owner or operator shall follow the written waste analysis plan as described in the approved Part B.

2. a. Prior to the storage of a particular type of hazardous waste for the first time, the owner or operator shall conduct waste analyses.
- b. This information shall include data pertaining to the compatibility of wastes with the container used for storage.
- c. The owner or operator shall ensure that the storage of any hazardous waste will not:
 - (1) Generate extreme heat or pressure, fire or explosion, or violent reaction;
 - (2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
 - (3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
 - (4) Damage the structural integrity of the device or facility containing the waste; or
 - (5) Through other like means threaten human health or the environment.
3. The analysis shall be repeated, as necessary, to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated when the owner or operator is notified or has reason to believe that the process operation generating the hazardous waste has changed.
4. The owner or operator shall verify the waste analysis plan as part of the quality assurance program. This quality assurance program will be in accordance with current U. S. EPA practices (Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods SW-846, 3rd Edition, date November 1986) or equivalent methods approved by DHS; and at a minimum ensure that the owner or operator maintains proper functional instructions, uses approved sampling and analytical methods, assures the validity of sampling and analytical procedures, and performs correct calculations.

5. Data developed for other purposes and existing published or documented data on the hazardous waste or on waste generated from similar process may supplement the waste analysis plan.
6. Samples taken for the purpose of monitoring shall be representative of the monitored activity.
7. The owner or operator shall retain records of all monitoring information as part of the operating record until closure of the facility.
8. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used;
 - f. The results of such analyses.

J. Security

1. The owner or operator shall prevent the entry of unauthorized persons or livestock onto the active portion of the facility by maintaining the following:
 - a. A fence in good condition or other artificial or natural barrier which completely surrounds (the active portion of) the facility and has gates or other means to control entry; or
 - b. A 24-hour surveillance system which continuously monitors and controls entry to (the active portion of) the facility; or
 - c. The security procedures as described in the approved Part B.

2. Signs indicating that the facility, or the hazardous waste area of the facility, contains hazardous waste shall be placed on the perimeter fence (at the entrance) and at locations where it is anticipated that unauthorized persons may enter the active portion of the facility.

Wording of the signs shall be in English, "Caution—Hazardous Waste Area—Unauthorized Persons Keep Out", and Spanish, "Cuidado! Zona de Residuos Peligrosos. Prohibida la Entrada a Personas No Autorizadas". Signs shall be legible from a distance of 25 feet.

K. Inspections

1. The owner or operator shall inspect the facility for malfunctions and deterioration, operator errors, and discharges which may cause or may lead to the release of hazardous waste constituents to the environment or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.
2. The owner or operator shall inspect all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and pumps) that are important to preventing, detecting, or responding to the environmental or human health hazards in accordance with the written inspection schedule in the approved Part B.
3. The owner or operator shall test and maintain all safety and emergency equipment (alarm systems, fire protection equipment, spill control equipment, decontamination equipment) as necessary to ensure proper operation in the event of an emergency.
4. The owner or operator shall remedy any deterioration or malfunction of equipment or structures which the inspection identified as soon as possible to ensure that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately as described in the contingency plan.
5. The owner or operator shall record inspections in an inspection log or summary and shall keep these records for at least three (3) years from the date of inspection.

L. Personnel Training

1. Facility personnel shall successfully complete the program of classroom instruction or on-the-job training which teaches them to perform at a level that ensures the facility's compliance with Chapters 6.5 and 6.7 of Division 20, H&S Code, and with Chapter 30, Division 4, Title 22, OCR.
2. Personnel shall have successfully completed this program within six (6) months after the date of their employment or assignment to a facility, or to a new position at the facility, whichever is later. Employees hired after the effective date of this permit shall not work in unsupervised positions until they have completed these training requirements.
3. Facility personnel shall take part in an annual review of the required training.
4. The owner or operator shall maintain the training records as identified in the approved Part B.
5. Training records on current personnel shall be kept until closure of the facility. Training records on former employees shall be kept for at least three (3) years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

M. Contingency Plan

1. Implementation

- a. The owner or operator shall follow the contingency plan described in the approved Part B.
- b. The provisions of the contingency plan shall be carried out immediately wherever there is a fire, explosion, release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

2. Distribution

A copy of the contingency plan and all revisions to the plan shall be:

- a. Maintained at the facility; and
- b. Submitted to all local police departments, fire departments, hospitals, contractors, and state and local emergency response teams that may be called up to provide emergency services.

3. Amendment of Contingency Plan

The contingency plan shall be reviewed and immediately amended, if necessary, whenever:

- a. Applicable regulations are revised;
- b. The plan fails in an emergency;
- c. The permit is revised;
- d. The list of emergency coordinators changes;
- e. The list of emergency equipment changes; and
- f. The facility changes in its design, construction, operation, or maintenance in a way that materially increases the potential for fire, explosions, or releases of hazardous waste.

The owner or operator shall notify DHS of all amendments to the contingency plan.

4. Emergency Coordinator

At all times there shall be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

5. Emergency Procedures

- a. Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) shall follow the procedures of the contingency plan as described in the approved Part B.
- b. The owner or operator shall notify DHS and appropriate state and local authorities that the cleanup procedures are complete and all emergency equipment listed in the contingency plan is clean and fit for its intended use before the operations are resumed.
- c. The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan.
- d. The owner or operator shall submit within 24 hours an oral report and within fifteen (15) calendar days a written report of each incident to DHS in accordance with item II.G.12. The Office of Emergency Services shall also be notified.

6. Arrangements With Local Authorities

- a. The owner or operator shall ensure that emergency response arrangements with local authorities are in effect upon the effective date of this permit.
- b. If local authorities refuse to enter into a preparedness and prevention arrangement with the owner or operator, the owner or operator shall document this refusal in the operating record.

N. Required Equipment

1. The owner or operator shall have available at the facility all required safety and emergency equipment as described in the approved Part B.
2. The facility water supply system shall be capable of providing water in adequate volume and pressure to maintain water hose streams.
3. Owner or operator shall maintain access to communications or alarm systems specified in the approved Part B.

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment shall be tested and maintained as necessary to ensure its proper operation in the time of emergency.

O. Required Aisle Space

The owner or operator shall maintain aisle space as needed to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment.

P. Record Keeping and Reporting

1. Availability, Retention, and Disposition of Records

a. All records, including plans required in this permit, shall be furnished upon request and made available at all reasonable times for inspection by any officer, employee, or representative of DHS, State Water Resources Control Board, or Regional Water Quality Control Board.

b. The owner or operator shall maintain, until closure is completed and certified by an independent engineer (registered in California), the following records, reports, documents, and all amendments, revisions, and modifications thereof at the owner or operator's place of business and at the facility, so as to be available at all times to operating personnel:

(1) Operating record.

(2) Training records for current employees.

(3) Hazardous Waste Facility Permit.

(4) Waste analysis plan.

(5) Contingency plan.

(6) Closure plan.

(7) Inspection schedules.

- c. The owner or operator shall retain the following records at the facility for at least three (3) years:
 - (1) Inspection record.
 - (2) Training records for former employees.
 - (3) Copies of each manifest received.
- d. The retention period for all records required in this permit is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by DHS.

2. Operating Records

- a. The owner or operator shall keep a written operating record at the facility.

The following information shall be recorded, as it becomes available, and maintained in the operating record until the closure of the facility:

- (1) The description and the quantity of each hazardous waste received, and the method(s) and date(s) of its storage at the facility;
- (2) The location of each hazardous waste within the facility and the quantity at each location. This information shall include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;
- (3) Records and results of waste analyses and trial tests performed;
- (4) Summary reports and details of all incidents that required implementing the contingency plan;
- (5) Records and results of inspections (except these data need be kept only three (3) years);
- (6) Monitoring, testing, or analytical data; and
- (7) All waste minimization certifications.

- b. When the owner or operator receives hazardous waste from an off-site source, he must inform the generator in writing that he has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

3. Reporting and Notification Requirements

- a. All reports and information requested by DHS shall satisfy the signatory requirements in item II.H. The waste minimization certifications as required in item II.J shall be signed in accordance with II.H.

- b. Annual Report

The owner or operator shall prepare and submit one copy of an annual report to DHS and one copy to the appropriate Regional Water Quality Control Board by March 1 of each year, beginning March 1, 1990. The annual report shall cover facility activities during the previous calendar year and shall include the following information:

- (1) The EPA identification number, name, and address of the facility;
- (2) The calendar year covered by the report;
- (3) The EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipment, the report shall give the name and address of the foreign generator; and
- (4) The description, quantity, and method of storage of each hazardous waste the facility received during the year, listed by the EPA identification number of each generator.

Q. Closure

1. Closure Plan and Amendment of Plan

- a. The owner or operator shall comply with the closure plan as described in the approved Part B.

- b. The owner or operator may amend his closure plan at any time during the active life of the facility. (The active life of the facility is that period during which wastes are periodically received.) The owner or operator shall propose to amend his plan any time changes in operating plans or facility design affect the closure plan or whenever there is a change in the expected year closure.
- c. The owner or operator shall submit to DHS for approval, within sixty (60) calendar days, any proposed amendments made to the closure plan.
- d. The owner or operator shall notify DHS at least one hundred and eighty (180) calendar days before the expected beginning date of closure.

2. Time Allowed for Closure

- a. Within ninety (90) calendar days after receiving the final volume of hazardous wastes or ninety (90) calendar days after approval of the closure plan, if that is later, the owner or operator shall remove all hazardous waste in storage in accordance with the approved closure plan.
- b. The owner or operator shall complete closure activities in accordance with the approved closure plan within one hundred and eighty (180) calendar days after receiving the final volume of waste or one hundred and eighty (180) calendar days after approval of the closure plan, if that is later.

3. Disposal or Decontamination of Equipment

- a. When closure is completed, all facility equipment and structures shall have been properly disposed of or decontaminated by removing all hazardous waste and residues.
- b. At closure, all hazardous waste and hazardous waste residues shall be removed from the storage area and containment system in accordance with the approved closure plan.

4. Certification of Closure

When closure is completed, the owner or operator shall submit to DHS certification both by the owner or operator and by an independent qualified engineer (registered in California) that the facility has been closed in accordance with the specifications in the approved closure plan.

R. Waste Reduction

Within one (1) year of the date of issuance of the facility operating permit by DHS and every four (4) years thereafter, the owner or operator shall conduct and complete a source reduction evaluation review and written plan in accordance with the procedures and format provided in the EPA Waste Minimization Opportunity Assessment Manual (EPA/626/7-88/003). The review and plan shall include, at a minimum, all requirements listed in Attachment III-A.

ATTACHMENT III-A

HAZARDOUS WASTE REDUCTION
CONDITIONS

I. SOURCE REDUCTION EVALUATION REVIEW AND PLAN

A. The source reduction evaluation review and written plan shall include, at a minimum, all of the following:

1. The name and location of the site.
2. The SIC Code of the site.
3. Identification of all routinely generated hazardous waste streams which result from ongoing processes or operations that have a yearly volume exceeding 5 percent of the total yearly volume of hazardous waste generated at the site.
4. For each hazardous waste stream identified in plan requirement 3 (above), the following information shall be included:
 - a. An estimate of the quantity of hazardous waste generated.
 - b. An evaluation of source reduction approaches available to the owner or operator which are potentially viable. The evaluation shall consider at least all of the following source reduction approaches:
 - (1) Input change.
 - (2) Operational improvement.
 - (3) Production process change.
 - (4) Product reformulation.

Refer to the EPA Waste Minimization Manual, pages 15 - 17 or California Health and Safety Code, Section 25244, 13(e) for complete definitions of above approaches.

5. A specification of, and a rationale for, the technically feasible and economically practicable source reduction measures which will be taken by the owner or operator with respect to each hazardous waste stream identified. The review and plan shall fully document any statement explaining the owner or operator's rationale for rejecting any available source reduction approach identified in plan requirement 4 (above).
6. An evaluation, and, to the extent practicable, a quantification, of the effects of the chosen source reduction method on emissions and discharges to air, water, or land.
7. A timetable for making reasonable and measurable progress towards implementation of the selected source reduction measures identified in plan requirement 5 (above).
8. Certification pursuant to Part III.

If an owner or operator has multiple sites with similar processes, operations, and waste streams, the owner or operator may prepare a single multisite review and plan addressing all of these sites.

II. SOURCE REDUCTION EVALUATION PLAN SUMMARY

Within one (1) year of the issuance of the facility operating permit by DHS, and every four (4) years thereafter, a source reduction evaluation plan summary shall be submitted to the regional permitting unit of DHS for approval prior to implementation. The plan summary shall include, at a minimum, the information specified in review and plan requirements 1, 2, 3, 6, 7 and 8, and a summary of the information required in plan requirements 4 and 5 (listed in Part I, above).

If an owner or operator has multiple sites with similar processes, operations, and waste streams, the owner or operator may prepare a single multisite plan summary addressing all of these sites.

III. PROFESSIONAL CERTIFICATION OF THE REVIEW AND PLAN AND PLAN SUMMARY

- A. Every review and plan, and plan summary, shall be submitted by the owner or operator for review and certification by an engineer who is registered as a professional engineer pursuant to Section 6762 of the Business and Professions Code and who has demonstrated expertise in hazardous waste management, or an environmental assessor who has been registered pursuant to Health and Safety Code Section 25570.3, and who has demonstrated expertise in hazardous waste management.

B. The engineer or assessor shall certify the review and plan and plan summary only if the review and plan and plan summary meet all of the following requirements:

1. The review and plan addresses each hazardous waste stream identified pursuant to review and plan requirement 3 (listed in Part I, above).
2. The review and plan addresses the following source reduction approaches as specified in review and plan requirement 4b (defined in Part I, above).
3. The review and plan clearly sets forth the measures to be taken with respect to each hazardous waste stream for which source reduction has been found to be technically feasible and economically practicable, with timetables for making reasonable and measurable progress, and properly documents the rationale for rejecting available source reduction measures.
4. The plan summary meets the requirements for a Source Reduction Evaluation Plan Summary as provided in Part II of the permit's waste reduction conditions (listed above).
5. The review and plan, and plan summary, does not merely shift hazardous waste from one environmental medium to another environmental medium by increasing emissions or discharges to air, water, or land.

IV. PERMITTEE CERTIFICATION OF PLAN IMPLEMENTATION

- A. At the time a plan summary is submitted to DHS, the owner or operator shall also submit a written statement from a responsible official of the facility certifying that the owner or operator has implemented, is implementing, or will be implementing, the source reduction measures identified in the plan summary according to the implementation schedule contained in the plan.
- B. An owner or operator may determine not to implement a measure selected pursuant to plan requirement 5 (Part I, above) only if the owner or operator determines, upon conducting further analysis or due to unexpected circumstances, that the selected measure is not technically feasible or economically practicable, or if attempts to implement that measure reveal that the measure would result in, or has resulted in, any of the following:

1. An increase in the generation of hazardous waste.
2. An increase in the release of hazardous chemicals to other environmental media.
3. Adverse impacts on product quality.
4. A significant increase in the risk of an adverse impact to human health or the environment.

V. PLAN AND PLAN SUMMARY AMENDMENTS

If the owner or operator elects not to implement the review and plan or plan summary, including, but not limited to, a selected measure pursuant to the requirements of Part 4 of the waste reduction condition (above), the owner or operator shall amend its review and plan and plan summary to reflect this rejection and include in the review and plan and plan summary proper documentation identifying the rationale for this rejection. Any amendments to the review and plan or plan summary should be submitted to the permitting unit of DHS' regional office within 30 days prior to implementation of the changes.

VI. HAZARDOUS WASTE MANAGEMENT PERFORMANCE REPORT

A. Within one (1) year of the issuance of the facility operating permit by DHS or at the time of permit renewal, and every year thereafter, the owner or operator shall prepare a hazardous waste management performance report documenting hazardous waste management approaches implemented at the facility. The report shall be prepared for each site in accordance with Section 5 of the EPA Waste Minimization Opportunity Assessment Manual [EPA/625/7-88/003]. The report shall include all of the following:

1. The name and location of the site.
2. The SIC Code for the site.
3. All of the following information for each waste stream identified pursuant to requirement 3 of the Source Reduction Evaluation Review and Plan (Part I, above).
 - a. An estimate of the quantity of hazardous waste generated and the quantity of hazardous waste managed, both onsite and offsite, during the current reporting year and the baseline year. The current reporting year is the calendar year immediately preceding the year in which the report is to be prepared. The baseline year is either of the following, whichever is applicable:

- (1) For the initial report, the baseline year is the calendar year in which the facility operating permit is issued.
 - (2) For all subsequent reports, the baseline year is the current reporting year of the immediately preceding report.
- b. An assessment of the effect, during the current year, of each hazardous waste management measure implemented since the baseline year, upon the generation and the onsite and offsite management of hazardous waste. The report shall consider, but shall not be limited to, measures which use all of the following approaches:
- (1) Source reduction, which means one of the following:
 - (a) Any action which causes a net reduction in the generation of hazardous waste,
 - (b) Any action taken before the hazardous waste is generated that results in a lessening of the properties which cause it to be classified as a hazardous waste.

Source reduction includes, but is not limited to, all of the following:

- (a) Input change.
- (b) Operational improvement.
- (c) Production process change.
- (d) Product reformulation.

Source reduction does not include any of the following:

- (a) Actions taken after a hazardous waste is generated.
- (b) Actions that merely concentrate the constituents of a hazardous waste to reduce its volume of that dilute the hazardous waste to reduce its hazardous characteristics.

(c) Actions that merely shift hazardous wastes from one environmental medium to another environmental medium.

(d) Treatment.

(2) Recycling.

(3) Treatment.

c. A description of factors during the current reporting year that have affected hazardous waste generation and onsite and offsite hazardous waste management since the baseline year, including, but not limited to, any of the following:

(1) Changes in business activity.

(2) Changes in waste classification.

(3) Natural phenomena.

(4) Other factors that have affected either the quantity of hazardous waste generated or onsite and offsite hazardous waste management requirements.

4. Certification of the report pursuant to Part VIII.

If an owner or operator has multiple sites with similar processes, operations, and waste streams, the owner or operator may prepare a single multisite report addressing all of these sites.

VII. PERFORMANCE REPORT SUMMARIES

A. Within one (1) year of issuance of the facility operating permit by DHS, and every year thereafter, the owner or operator shall prepare and submit to the permitting unit of DHS' regional office a hazardous waste management performance report summary by March 1 of each year. The report summary shall be completed for each source reduction option selected by the Permittee in accordance with the format provided in Worksheet 19 of the EPA Waste Minimization Opportunity Assessment Manual [EPA/625/7-88/003].

- B. In addition, the performance report summary shall provide the information specified in requirements 1 and 2 of the performance report, and a summary of the information specified in requirement 3 of the report (refer to Part VI, above), and shall be certified per Part VIII.
- C. If an owner or operator has multiple sites with similar processes, operations, and waste streams, the owner or operator may prepare a single multisite report summary addressing all of these sites.

VIII. PROFESSIONAL CERTIFICATION OF PERFORMANCE REPORTS AND REPORT SUMMARIES

- A. Every hazardous waste management performance report and report summary completed pursuant to Parts VI and VII above shall be submitted by the owner or operator for review and certification by an engineer who is registered as a professional engineer pursuant to Section 6762 of the Business and Professions Code and who has demonstrated expertise in hazardous waste management, or by an individual who is responsible for the processes and operations of the site, or by an environmental assessor who is registered pursuant to H & SC section 25570.3 and who has demonstrated expertise in hazardous waste management. The engineer, or individual, or assessor, shall certify the report and report summary only if the report and report summary meet all of the following requirements, as applicable:
 - 1. The report identifies factors that affect the generation and onsite and offsite management of hazardous wastes and summarizes the effect of those factors on the generation and onsite and offsite management of hazardous wastes.
 - 2. The report summary complies with the requirements specified in Part VII above.

IX. OWNER OR OPERATOR RECORD KEEPING REQUIREMENTS

- A. The owner or operator shall retain the original of the current review and plan, plan summary, report, and report summary, shall maintain a copy of the current review and plan, plan summary, report, and report summary at each site, or, for a multisite review and plan, plan summary, report, or report summary, at a central location, and upon request, shall make it available to any authorized representative of DHS conducting an inspection pursuant to Section 25185.

- B. If an owner or operator fails, within 5 days, to make available to the inspector the review and plan, plan summary, report, or report summary, DHS or any authorized representative of DHS conducting an inspection pursuant to Section 25185, shall, if appropriate, impose a civil penalty pursuant to Section 25189.3.
- C. If the owner or operator fails to respond to a request for a copy of its review and plan, plan summary, report, or report summary made by DHS, within 30 days from the date of the request, DHS shall, if appropriate, assess a civil penalty pursuant to Section 25189.3.

X. GENERAL OPERATING AND REPORTING REQUIREMENTS

- A. The owner or operator shall annually certify the following information:
 - 1. The owner or operator has established a program to reduce the volume or quantity and toxicity of hazardous waste generated at the facility to the degree, determined by the owner or operator, to be economically practicable.
 - 2. The proposed method of treatment, storage, or disposal of the hazardous waste generated at the facility is that practicable method currently available to the owner or operator which minimizes the present and future threat to human health and the environment.

The owner or operator shall make this certification, in accordance with 22 OCR 66373, by March 1 of each year. The owner or operator shall submit the certification to DHS and shall record and maintain the certification in the Operating Record.
[H&S Code 25202.9]

- B. The owner or operator shall submit to DHS detailed descriptions of any programs the owner or operator may have to assist generators of hazardous waste in reducing the volume or quantity and toxicity of wastes they produce.
- C. The owner or operator shall submit the following information to DHS and shall submit revisions or changes to DHS within 30 days of those revisions or changes:
 - 1. A list of generators who received information from the owner or operator (see item B).

2. A list of generators who used the owner or operator's contractor services on a waste reduction program.
3. A list of generators known to the owner or operator who have a waste reduction program in place and any known results (i.e. has there been a reduction in wastes submitted for treatment, recycling or disposal).

IV. CORRECTIVE ACTION FOR RELEASES OF HAZARDOUS WASTES

A. Corrective Action For Continuing Releases

1. For all permits issued after November 8, 1984, Section 3004(u) of RCRA (Section 206 of the Hazardous and Solid Waste Amendments of 1984) and regulations promulgated as 40 CFR 264.101, require corrective action, as necessary to protect human health and the environment, for all releases of hazardous wastes or constituents from any Solid Waste Management Unit (SWMU), regardless of when waste was placed in the unit.
2. This permit requires the owner or operator to complete a RCRA Facility Investigation (RFI) for five (5) SWMUs and a Phase 1 RFI for eight (8) SWMUs.
3. Non-compliance by the owner or operator with any conditions of this permit, including failure to submit information required by this permit or misrepresentation of any relevant facts at any time, are causes for permit termination [22 CFR 66383 (a)]. All information submitted must be certified as required by 22 CFR 66373(d). Copies of all plans and results shall be submitted to DHS.
4. If DHS determines that further actions beyond those provided in this Corrective Action (or changes to that which is stated herein) are warranted, DHS shall modify the Corrective Action according to the permit modification processes under 22 CFR 66382. DHS may modify or revoke and reissue the permit, subject to the limitations of 22 CFR 66282(c), and may request an updated application if necessary.
5. All references herein to Unit numbers are found in the RCRA Facility Assessment, Long Beach Naval Shipyard, Long Beach, California, Department of Health Services, November 30, 1989.
6. All raw data, such as laboratory reports, drilling logs, and other supporting information gathered or generated during activities undertaken pursuant to this Corrective Action shall be maintained at the facility during the term of this permit, including any reissued permits.

B. Assessment Of Newly Identified Solid Waste Management Units

1. The owner or operator shall notify DHS (in writing) of any newly identified SWMUs discovered during the course of ground water monitoring, field investigations, environmental audits or other means no later than fifteen (15) calendar days after discovery.

2. The owner or operator shall submit a Phase I RCRA Facility Investigation Plan for all newly identified SWMUs, including a proposed schedule of implementation and completion of this plan to DHS no later than ninety (90) calendar days after notification to DHS pursuant to condition IV.B.1. The Phase I RFI Plan shall include methods and specific actions as necessary to determine whether a prior or continuing release of hazardous waste or hazardous constituents has occurred at each SWMU. The plan shall also include all requirements described in Attachment IV-A. No later than thirty (30) calendar days after owner or operator has received written approval of the Phase I RFI Plan from DHS, the owner or operator shall begin implementation of the Plan. The owner or operator shall implement the Phase I RFI Plan according to the schedule specified in the Plan, as approved or modified by DHS.
3. The owner or operator shall submit a Phase I RFI Report to DHS no later than thirty (30) calendar days after the owner or operator has completed implementation of the Phase I RFI Plan described in condition IV.B.2. The Phase I RFI Report shall describe all results obtained from implementation of the Phase I RFI Plan.
4. After reviewing the Phase I RFI Reports described in condition IV.B.3, DHS will determine the need for an RFI at the SWMUs covered in the report. If DHS determines that an RFI is needed at specific SWMUs, the owner or operator shall prepare an RFI Plan for those SWMUs as specified in condition IV.D.

C. Specific Phase I RFI Plans And Reports

1. No later than one hundred-eighty (180) calendar days after the effective date of this permit, the owner or operator shall submit to DHS a Phase I RFI Plan for the following SWMUs:

<u>SWMU#</u>	<u>Description</u>
(condition IV.A.5)	
4.6	Former quonset hut site (in the vicinity of Building 129)
4.20	Parking Lot H Past Operations
4.23	Tank Farm 303 (including stained soil along the east fence)
4.26	Mole Solid Waste Operations Site
4.27	Chemical Material and Waste Storage Area
4.29	Mole Extension Sites
4.30	Skeet Range Solid Waste Fill Area
4.31	Boat Disposal Location

The Phase I RFI Plan shall include, at a minimum, the requirements described in conditions IV.C.1.(a) through (d).

- (a) The Plan shall include provision for soil sampling and analysis of the wastes to assess information on previous hazardous waste releases.
 - (b) The Phase I RFI Plan shall include a proposed schedule for implementation and completion of the Plan.
 - (c) The Phase I RFI Plan shall demonstrate that all applicable requirements described in Attachment IV-A are met. If the owner or operator believes that certain requirements in Attachment IV-A are not applicable, the specific requirements shall be identified and the rationale for inapplicability shall be provided.
 - (d) The owner or operator shall prepare a cost estimate for implementation of the Phase I RFI Plan. The cost estimate shall be submitted to DHS no later than ninety (90) calendar days after the effective date of this permit.
2. No later than thirty (30) calendar days after the owner or operator has received written approval of the Phase I RFI Plan from DHS, the owner or operator shall begin implementing the Plan. The owner or operator shall implement the Plan according to the schedule specified in the Plan, as approved or modified by DHS. If the Phase I RFI Plan submitted by the owner or operator is not approved by DHS, DHS may require the owner or operator to revise the plan and resubmit it on a specified date.
3. The owner or operator shall submit a Phase I RFI Report to DHS no later than thirty (30) calendar days after the owner or operator has completed implementation of the Phase I RFI Plan. The Phase I RFI Report shall describe all results obtained from implementation of the Phase I RFI Plan.

2. Review of Phase I RFI Reports

After reviewing the Phase I RFI Report described in condition IV.C.3, DHS will determine the need for a RFI at the SWMU covered in the Report. If DHS determines that an RFI is needed at the specific SWMU, the owner or operator shall prepare an RFI Plan for the SWMU as specified in condition IV.D.

D. RCRA Facility Investigation (RFI) Plans

1. When requested by DHS pursuant to condition IV.B.4, the owner or operator shall prepare an RFI Plan in the vicinity of each SWMU identified by DHS to determine whether soil, ground water or air releases have occurred or are occurring. The sampling program shall include parameters which are appropriate to identify the constituents of wastes which have been treated, stored or disposed in each SWMU. At a minimum, the sampling program shall include sampling surface and subsurface soils above the water table and sampling of ground water in the vicinity of each SWMU. The RFI Plan shall include a proposed schedule for implementation and completion of the Plan. At a minimum, the RFI Plan shall include all requirements described in Attachment IV-B.
2. The owner or operator shall prepare an RFI Plan in the vicinity of each of the following:

<u>SWMU #</u> <u>(condition IV.A.5)</u>	<u>Description</u>
4.8	Area North of Building 210
4.21	Hillside East of Drydock 1
4.22	Parking Lot X
4.28	Industrial Waste Disposal Site
4.32	Harbor Sediments

3. The owner or operator shall submit the RFI Plans to DHS no later than one (1) year after the effective date of this permit. If the RFI Plan submitted by the owner or operator is not approved by DHS, DHS may require the owner or operator to revise the RFI Plan and resubmit it on a specified date.
4. The owner or operator shall prepare a cost estimate for implementation of the RFI Plans. The cost estimate shall be submitted to DHS no later than ninety (90) calendar days after the effective date of this permit.

E. RCRA Facility Investigation (RFI) Plan Implementation

1. No later than fifteen (15) calendar days after the owner or operator has received written approval from DHS for the RFI Plans submitted pursuant to condition IV.D, the owner or operator shall begin implementing the RFI Plans. The owner or operator shall implement the RFI Plans according to the schedules specified in the RFI Plans, as approved or modified by DHS. The owner or operator shall obtain and prepare the following during implementation of all RFI Plans:

- a. Documentation of the presence or absence of hazardous constituents in surface and subsurface soils and in ground water in the vicinity of the identified SWMU;
 - b. If hazardous constituents are present, a description of the hazardous constituent and soil properties, including solubility, speciation, adsorptive properties, leachability, exchange capacity, biodegradability, hydrolysis and photolysis potential, oxidation and other factors which affect transformation and potential migration of the hazardous constituents;
 - c. If hazardous constituents are present, an extrapolation of future hazardous constituent movement; and,
 - d. Documentation of all calculations and procedures used to analyze RFI Plan results.
2. The owner or operator shall submit to DHS signed quarterly progress reports for each RFI Plan beginning no later than ninety (90) calendar days after the owner or operator has received written approval from DHS for each RFI Plan. These reports shall contain:
 - a. A description of the portion(s) of the RFI Plan completed;
 - b. Summaries of findings;
 - c. Summaries of all changes made in the RFI during the reporting period;
 - d. Summaries of all problems or potential problems encountered during the reporting period;
 - e. Projected work for the next reporting period; and,
 - f. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

F. RCRA Facility Investigation (RFI) Reports

1. No later than sixty (60) calendar days after completion of each RFI Plan, the owner or operator shall submit to DHS a draft RFI Report. The owner or operator shall develop the draft RFI Report into final form no later than thirty (30) calendar days after the owner or operator receives DHS' comments on the draft RFI Report.
2. The owner or operator shall ensure that all RFI Reports include analyses and summaries of all facility investigations of SWMUs, including all results and conclusions. The summaries shall include

a report on the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The report shall also describe the extent of contamination (qualitative/ quantitative) in relation to background levels indicative of the area. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support Corrective Measure Studies, if necessary. The owner or operator shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Attachment IV-B.

G. Corrective Measures Plan

1. DHS will review each final RFI Report submitted pursuant to condition IV.F, and notify the owner or operator in writing of the need for further investigative actions and/or the need for corrective measures as required under 40 CFR 264.101(a).
2. If DHS determines that a SWMU has had a release of hazardous waste or constituents which threatens or may threaten human health or the environment, the owner or operator shall develop a Corrective Measures Plan (CMP) for that unit. The plan shall include activities necessary for removal and/or treatment of releases and any necessary monitoring of air, soil, and/or water to determine the adequacy of the actions. The plan shall also contain projected time schedules for implementation and completion of actions and for interim milestone activities. If the time necessary for implementation exceeds one year, the schedule shall specify interim dates for submittal of progress reports. At a minimum, each Corrective Measures Plan shall include all requirements described in Attachment IV-C.
3. The owner or operator shall submit the Corrective Measures Plan to DHS no later than forty-five (45) calendar days after such Corrective Measures Plan is requested by DHS. If the Corrective Measures Plan submitted by the owner or operator is not approved by DHS, DHS may require the owner or operator to revise the Corrective Measures Plan and resubmit it on a specified date.
4. The owner or operator shall prepare a cost estimate for implementation of the Corrective Measures Plan. The cost estimate shall be submitted to DHS no later than forty-five (45) calendar days after the owner or operator receives a written request for a Corrective Measures Plan from DHS.

H. Permit Modification

Based on the information the owner or operator submits pursuant to conditions IV.A through IV.J, DHS will select environmental protection standards for all hazardous wastes and/or hazardous constituents released from SWMUs. DHS will also specify which corrective measures the owner or operator shall implement to meet the proposed environmental protection standards as well as any conditions for submitting corrective measure designs. DHS will propose these modifications as a major modification to this permit pursuant to 40 CFR 124.5 and 124.10 and Section 66382, Title 22, CCR. DHS will notify the owner or operator if specific corrective measures shall be implemented under other DHS or EPA authority in advance of permit modification in order to minimize environmental releases.

I. Other Provisions

1. The owner or operator shall submit a report to DHS describing any imminent or existing hazard to human health or the environment from the present or past release of hazardous wastes or hazardous constituents as required by conditions II.G.12 and II.G.13.
2. If either the owner, operator or DHS determines that any Phase I RFI Plan, RFI Plan, or Corrective Measures Plan required pursuant to Part IV of this permit no longer satisfies the requirements of 40 CFR 264.101, or this permit, for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units, the owner or operator shall submit amended plans to DHS no later than ninety (90) calendar days after the amendment is requested by DHS.
3. The owner or operator shall ensure that all reports submitted pursuant to Part IV of this permit are signed and certified in accordance with Section 66373, Title 22, CCR, and this permit.
4. Failure by the owner or operator to submit, revise, or implement a Phase I RFI Plan, a Phase I RFI Report, an RFI Plan, an RFI Report, or a Corrective Measure Plan, as required by Part IV of this permit, is a basis for permit termination by DHS.
5. All plans, reports, and schedules required by the conditions of this permit are, upon approval by DHS, incorporated into this permit. Any noncompliance with such approved plans, reports and schedules shall be termed noncompliance with this permit. Extensions of the due dates for submittals may be granted by DHS based on the owner's or operator's documentation that sufficient justification for the extension exists.

J. Facility Investigation and Corrective Action Summary

A chronological summary of the requirements contained in this part is presented below:

<u>Item</u>	<u>Due Date</u>
Notification of newly-identified SWMUS	fifteen (15) calendar days after discovery
Phase I RFI Plan for newly-identified SWMUS	ninety (90) calendar days after discovery
Implementation of Phase I RFI for newly-identified SWMUS	thirty (30) calendar after Phase I RFI Plan approved
Phase I RFI Report	thirty (30) calendar days after completed implementation of the Phase I RFI Plan
Phase I RFI Plan for SWMUS identified in this permit	one hundred-eighty (180) calendar days after the effective date of this permit
Cost Estimate for Phase I RFI	ninety (90) calendar days after the effective date of this permit
RFI Plan for SWMU(s) identified for further investigation in this permit	one (1) year after the effective date of this permit
Cost Estimates for RFI Implementation	ninety (90) calendar days after the effective date of this permit
Implementation of RFI Plan	fifteen (15) calendar days after RFI Plan approval
RFI Plan Quarterly Progress Reports	ninety (90) calendar days after RFI Plan approval

Item

Due Date

Draft RFI Report

sixty (60) calendar
days after completion
of RFI Plan

Final RFI Report

thirty (30) calendar
days after receiving
DHS comments on draft
report

Corrective Measures Plan (CMP)

forty-five (45)
calendar days after CMP
request

Cost Estimate for CMP implementation

forty-five (45)
calendar days after CMP
request

Phase I RFI Plan, RFI Plan, or CMP
amended plans

ninety (90) calendar
days after request

ATTACHMENT IV-A

PHASE I RFI PLAN REQUIREMENTS

The owner or operator shall ensure that each Phase I Plan meets the following requirements:

- I. DHS may split samples from any sampling activity which takes place as part of the Phase I RFI.
- II. The Phase I RFI Plan shall provide details about each SWMU, including:
 - A. the type of unit;
 - B. the location of the unit on a topographic map of appropriate scale;
 - C. the general dimensions and capacities;
 - D. the function of the unit;
 - E. the dates that the unit was operated;
 - F. a description of the wastes that were placed in the unit; and,
 - G. a description of any known releases or spills (to include ground water data, soil analyses, and/or surface water data).
- III. The Phase I RFI Plan shall include a Project Management Plan which describes the technical approach, schedules, budget, and personnel involved in preparation and implementation of the Phase I RFI Plan and Phase I RFI Report. The Project Management Plan shall also include a description of the qualifications of personnel performing or directing the Phase I RFI Plan, including contractor personnel, and shall document the overall management approach.
- IV. The Phase I RFI Plan shall include a sampling and analysis program which addresses the applicable requirements in Section I.B of Attachment IV-B.
- V. The sampling and analysis program shall be capable of yielding representative samples. The sampling program shall include a list of parameters capable of detecting migration of hazardous waste or hazardous constituents from the unit into soil. The list shall include the basis for selecting each proposed indicator parameter, including any analysis or calculations performed. The basis for selection shall, where possible, include chemical analysis of the

unit's waste and/or leachate as appropriate. In choosing parameters, the owner or operator shall consider:

- A. the types, quantities, and concentration of constituents in waste managed at the solid waste management unit, including incidental constituents which may be released from process areas associated with or in close proximity to the solid waste management unit;
 - B. the mobility, stability, and persistence of waste constituents or their reaction products;
 - C. the detectability of waste constituents, or their reaction products, and,
 - D. the natural variations in background concentrations of known or suspected waste constituents or their reaction products.
- VI. The Phase I RFI Plan shall be sufficient to determine the presence of hazardous waste or hazardous constituents at the SWMU and enable the owner or operator to recommend appropriate further actions.
- VII. Each Phase I RFI shall identify the criteria to be used by the owner or operator to determine if further investigation is warranted. Options include but are not limited to:
- A. additional Phase I RFI sampling;
 - B. preparation and implementation of an RFI Plan; or
 - C. no further action is required.

ATTACHMENT IV-B

RFI PLAN REQUIREMENTS

I. RFI WORKPLAN REQUIREMENTS

The owner or operator shall prepare a RCRA Facility Investigation (RFI) Plan that meets the requirements of Part II of this attachment. This Plan shall also include the development of the following plans, which shall be prepared concurrently.

A. Project Management Plan

The owner or operator shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules and personnel. The Project Management Plan will also include a description of the qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling And Analysis Plan

The owner or operator shall prepare a plan to document all monitoring procedures, i.e., sampling, field measures and sample analysis, performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented.

1. Sampling/Field Measurement Procedures

The sampling section of this workplan shall be in accordance with Characterization of Hazardous Waste Sites, A Methods Manual: Volume II. Available Sampling Methods, EPA-600/4-83-040. The workplan shall also at a minimum discuss the following:

- a. Selecting appropriate sampling locations, depths, etc. (located on facility map);
- b. Providing a statistically sufficient number of sampling sites;
- c. Obtaining all necessary ancillary data;
- d. Determining conditions under which sampling should be conducted;

- e. Determining which media are to be sampled (e.g., groundwater, air soil, sediment, etc);
- f. Determining which parameters are to be measured and where;
- g. Selecting the frequency of sampling and length of sampling period;
- h. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected;
- i. Documenting field sampling operations and procedures, including:
 - (1) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and adsorbing reagents);
 - (2) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
 - (3) Documentation of specific sample preservation method;
 - (4) Calibration of field instruments;
 - (5) Submission of field-biased blanks, where appropriate;
 - (6) Potential interferences present at the facility;
 - (7) Construction materials and techniques, associated with monitoring wells and piezometers;
 - (8) Field equipment listing and sampling containers;
 - (9) Sampling order; and,
 - (10) Decontamination procedures.
- j. Selecting appropriate sample containers;
- k. Sampling preservation; and

1. Chain-of-custody, including:

- (1) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and,
- (2) Pre-prepared sample labels containing all information necessary for effective sample tracking.

2. Sample Analysis

Sample Analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods". The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:

- (1) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- (2) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and,
- (3) Specification of laboratory sample custody procedures for sample handling, storage, and dispersment for analysis.

b. Sample storage;

c. Sample preparation methods;

d. Analytical procedures, including:

- (1) Scope and application of the procedure;
- (2) Sample matrix;
- (3) Potential interferences;
- (4) Precision and accuracy of the methodology; and,
- (5) Method detection limits.

- e. Calibration procedures and frequency;
- f. Data reduction, validation and reporting;
- g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
 - (1) Method blank(s);
 - (2) Laboratory control sample(s);
 - (3) Calibration check sample(s);
 - (4) Replicate sample(s);
 - (5) Matrix-spiked sample(s);
 - (6) Control charts;
 - (7) Surrogate samples;
 - (8) Zero and span gases; and,
 - (9) Reagent quality control checks.
- h. Preventive maintenance procedures and schedules;
- i. Corrective action (for laboratory problems); and,
- j. Turnaround time.

C. Data Management Plan

The owner or operator shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

- a. Unique sample or field measurement code;

- b. Sampling or field measurement location and sample or measurement type;
- c. Sampling or field measurement raw data;
- d. Laboratory analysis ID number;
- e. Property or component measured; and,
- f. Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

- a. Unsorted (raw) data;
- b. Results for each medium, or for each constituent monitored;
- c. Data reduction for statistical analysis, as appropriate; and,
- d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography).

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

- a. Display sampling location and sampling grid;
- b. Indicate boundaries of sampling area, and area where more data are required;
- c. Display geographical extent of contamination;
- d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameters; and,
- e. Indicate features affecting intramedia transport and show potential receptors.

D. Health and Safety Plan

The Health and Safety Plan shall include the availability of resources such as roads, water supply, electricity and telephone service; the known hazards and risks associated with each activity to be conducted; and the key personnel and alternates responsible for site safety, response operations and protection of the public health. The plan shall delineate the work area, describe levels of protection to be worn by personnel in the work area, procedures to control site access, and decontamination procedures for personnel and equipment. Site emergency procedures shall be established and any special training required for site personnel shall be identified. The Health and Safety Plan shall be consistent with:

- . NIOSH Occupational and Health Guidance Manual for Hazardous Waste Site Activities (1985);
- . EPA Order 1440.1 - Respiratory Protection;
- . EPA Order 1440.3 - Health and Safety Requirements for Employees Engaged in Field Activities;
- . Facility Contingency Plan;
- . OSHA regulations particularly in 29 CFR 1910 and, 1926;
- . State and local regulations.

II. RFI Technical Requirements

The owner or operator shall follow the procedures described in this section when conducting investigations to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigation shall result in data of adequate technical content and quality to support the development and evaluation of the Corrective Action Plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure information Report may be referenced as appropriate.

The scope of all sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The owner or operator shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The owner or operator shall characterize the following as they relate to identified sources, pathways, and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility or refer to such a program previously submitted with the Part B. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground water flow in the saturated and unsaturated zones beneath the facility, including:

- (1) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
- (2) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
- (3) Depositional history;
- (4) Regional and facility specific ground water flow patterns; and,
- (5) Identification and characterization of areas and amounts of recharge and discharge.

b. An analysis of any topographic features that might influence the ground water flow system.

c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:

- (1) Hydraulic conductivity and porosity (total and effective);

- (2) Lithology, grain size, sorting, degree of cementation;
 - (3) An interpretation of hydraulic interconnections between saturated zones; and,
 - (4) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).
- d. Based on data obtained from ground water monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:
- (1) Water level contour and/or potentiometric maps;
 - (2) Hydrologic cross sections showing vertical gradients;
 - (3) The flow system, including the vertical and horizontal components of flow; and
 - (4) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.
- e. A description of manmade influences that may affect the hydrology of the site, identifying:
- (1) Local water supply and production wells with an approximate schedule of pumping; and,
 - (2) Manmade hydraulic structures (pipelines, french drains, ditches, etc.).

2. Soils

The owner or operator shall conduct a program to evaluate soils at the facility (or refer to such a program previously submitted with the Part B) which shall provide the following information:

- a. Surface soil distribution;
- b. Soil profile, including ASTM classification of soils;

- c. Transects of soil stratigraphy;
- d. Hydraulic conductivity (saturated and unsaturated);
- e. Relative permeability;
- f. Bulk density;
- g. Porosity;
- h. Soil sorptive capacity;
- i. Cation exchange capacity (CEC);
- j. Soil organic content;
- k. Soil pH;
- l. Particle size distribution;
- m. Depth of water table;
- n. Moisture content;
- o. Effect of stratification on unsaturated flow;
- p. Infiltration;
- q. Evapotranspiration;
- r. Storage capacity;
- s. Vertical flow rate; and
- t. Mineral content.

3. Surface Water and Sediment

The owner or operator shall conduct a program to evaluate surface water bodies in the vicinity of the facility. Such characterization may include, but not be limited to, the following activities and provide the following information:

- a. Description of the temporal and permanent surface water bodies including:

- (1) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
 - (2) For impoundments: location, elevation surface area, depth, volume, freeboard, and construction and purpose;
 - (3) For streams, ditches, harbors and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents;
 - (4) Drainage patterns; and,
 - (5) Evapotranspiration.
- b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients ($\text{NH}_3/\text{NO}_3^-/\text{NO}_2^-$, PO^{3-}), chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.
- c. Description of sediment characteristics including:
- (1) Deposition area;
 - (2) Thickness profile; and
 - (3) Physical and chemical parameters(e.g., grain size, density, organic carbon content, ion exchange, pH, etc.).

4. Air

The owner or operator shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

- a. A description of the following parameters:
- (1) Annual and monthly rainfall averages;
 - (2) Monthly temperature averages and extremes;

- (3) Wind speed and direction;
 - (4) Relative humidity/dew point;
 - (5) Atmospheric pressure;
 - (6) Evaporation data;
 - (7) Development of inversions; and,
 - (8) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., hurricanes).
- b. A description of topographic and manmade features which affect air flow and emission patterns, including:
- (1) Ridges, hills or mountain areas;
 - (2) Canyons or valleys;
 - (3) Surface water bodies (e.g., rivers, lakes, bays, etc.);
 - (4) Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected, the owner or operator shall collect analytic data to completely characterize the wastes and the areas where wastes have been placed, to the degree possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

- 1. Unit/Disposal Area Characteristics:
 - a. Location of unit/disposal area;
 - b. Type of unit/disposal area;
 - c. Design features;
 - d. Operating practices (past and present);

- e. Period of operation;
- f. Age of unit/disposal area;
- g. General physical conditions; and,
- h. Method used to close the unit/disposal area.

2. Waste Characteristics

a. Type of wastes placed in the unit:

- (1) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);
- (2) Quantity; and
- (3) Chemical composition.

b. Physical and chemical characteristics such as:

- (1) Physical form (solid, liquids, gas);
- (2) Physical description (e.g., powder, oily, sludge);
- (3) Temperature;
- (4) pH;
- (5) General chemical class (e.g., acid, base, solvent);
- (6) Molecular weight;
- (7) Density;
- (8) Boiling point;
- (9) Viscosity;
- (10) Solubility in water;
- (11) Cohesiveness of the waste; and
- (12) Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:

- (1) Sorption capability;
- (2) Biodegradability, bioconcentration, biotransformation;
- (3) Photodegradation rates;
- (4) Hydrolysis rates; and
- (5) Chemical transformations.

The owner or operator shall document the procedures used in making the above determination.

C. Characterization Of Release Of Hazardous Constituents

The owner or operator shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The owner or operator shall follow the procedures described below when investigating each of the media:

1. Groundwater Contamination

The owner or operator shall collect at a minimum the following information when conducting investigations of ground water contamination at the facility:

- a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from the facility;
- b. The horizontal and vertical direction of contamination movement;
- c. The velocity of contaminant movement;
- d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);

- e. An evaluation of factors influencing the plume movement; and
- f. An extrapolation of future contaminant movement.

The owner or operator shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination

The owner or operator shall collect at a minimum the following information when conducting investigations of soil contamination at the facility:

- a. A description of the vertical and horizontal extent of contamination;
- b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;
- c. Specific contaminant concentrations;
- d. The velocity and direction of contamination movement; and
- e. An extrapolation of future contaminant movement.

The owner or operator shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The owner or operator shall collect at a minimum the following information when conducting investigations of surface water and sediment contamination at the facility:

- a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;
- b. The horizontal and vertical direction of contaminant movement;

- c. The contaminant velocity;
- d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;
- e. An extrapolation of future contaminant movement; and,
- f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

4. Air Contamination

The owner or operator shall collect at a minimum the following information when conducting investigations of air contamination at the facility:

- a. A description of the horizontal and vertical direction and velocity of contaminant movement;
- b. The rate and amount of the release; and,
- c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The owner or operator shall document the procedures used in making the above determinations.

5. Subsurface Gas Contamination

The owner or operator shall collect at a minimum the following information when conducting investigations of air contamination at the facility:

- a. A description of the horizontal and vertical extent of the subsurface gases mitigation;
- b. The chemical composition of the gases being emitted;
- c. The rate, amount, and density of the gases being emitted; and,
- d. Horizontal and vertical concentration profiles of the subsurface gases emitted.

The owner or operator shall document the procedures used in making the above determinations.

D. Potential Receptors

The owner or operator shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of ground water:
 - a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/ non-potable, and industrial); and
 - b. Location of ground water users, to include withdrawal and discharge wells, within one mile of the impacted area.

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:
 - a. Domestic and municipal (e.g., potable and lawn/ gardening watering);
 - b. Recreational (e.g., swimming, fishing);
 - c. Agricultural;
 - d. Industrial; and,
 - e. Environmental (e.g., fish and wildlife propagation).
3. Human use of or access to the facility and adjacent lands, including but not limited to:
 - a. Recreation;
 - b. Hunting;
 - c. Residential;

- d. Commercial; and,
 - e. Relationship between population locations and prevailing wind direction.
4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.
 5. A general description of the ecology within and adjacent to the facility, including animal species known to be present.
 6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age, sex, and sensitive subgroups.
 7. A description of any known or documented endangered or threatened species near the facility.

ATTACHMENT IV-C

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY

The Corrective Measure Study shall demonstrate the following format:

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken at the facility. The owner or operator shall furnish the personnel, materials and services necessary to prepare the Corrective Measure Study, except as otherwise specified.

SCOPE

The Corrective Measure Study consists of four tasks:

Task I: Identification and Development of the Corrective Measure Alternative or Alternatives

- A. Description of Current Situation
- B. Establishment of Corrective Action Objectives
- C. Screening of Corrective Measures Technologies
- D. Identification of the Corrective Measure Alternative or Alternatives.

Task II: Evaluation of the Corrective Measure Alternative or Alternatives

- A. Technical/Environmental/Human Health/Institutional
- B. Cost Estimate

Task III: Justification and Recommendation of the Corrective Measure or Measures

- A. Technical
- B. Environmental
- C. Human Health

Task IV: Reports

- A. Progress
- B. Draft
- C. Final

TASK I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION
ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation, the owner or operator shall identify, screen and develop the alternative or alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The owner or operator shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation Report. The owner or operator shall provide an update to information regarding previous response activities and any interim measures which have or are being implemented at the facility. The owner or operator shall also make a facility-specific statement of the purpose of the response, based on the results of the RCRA Facility Investigation. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The owner or operator, in conjunction with DHS, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RCRA Facility Investigation, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR 264.100.

C. Screening of Corrective Measures Technologies

The owner or operator shall review the results of the RCRA Facility Investigation and identify corrective measure technologies which are applicable at the facility. The owner or operator shall screen the identified corrective measure technologies to eliminate those that may prove infeasible to

implement (that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objectives within a reasonable time period). This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations. Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below.

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from considerations. Waste characteristics particularly affect the feasibility of in-site methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations

During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternative or Alternatives

The owner or operator shall develop the Corrective Measure Alternative or Alternatives based on the corrective action objectives and analysis of corrective measure technologies.

The owner or operator shall rely on engineering practice to determine which of the identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The owner or operator shall document the reasons for excluding technologies.

TASK II: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE(S)

The owner or operator shall describe each corrective measure alternative that passes through the screening process in Task I and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The owner or operator shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The owner or operator shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The owner or operator shall evaluate each alternative in the four areas described below.

1. Technical

The owner or operator shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The owner or operator shall evaluate performance based on the effectiveness and useful life of the corrective measure.

(1) "Effectiveness" shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The

evaluation should also consider the effectiveness of combinations of technologies.

- (2) "Useful life" is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future live of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.
- b. The owner or operator shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability.
- (1) "Operation and maintenance requirements" include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straight forward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered.
 - (2) "Demonstrated" and expected reliability is a way of measuring the risk and effect of failure. The owner or operator should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrolled changes at the site.
- c. The owner or operator shall describe the implementability of each corrective measure including the relative ease of installation

(constructability) and the time required to achieve a given level or response.

(1) "Constructability" is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote locations vs. a congested urban area). The owner or operator shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities.

(2) "Time" has two components that shall be addressed: the time it takes to implement a corrective measure; and, the time it takes to actually see beneficial results. "Beneficial results" are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The owner or operator shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The owner or operator shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and, an analysis of measures to mitigate adverse effects.

3. Human Health

The owner or operator shall assess each alternative in terms of the extent to which it mitigates short and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional

The owner or operator shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative shall be assessed.

B. Cost Estimate

The owner or operator shall develop an estimate of the cost for each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital, and operation and maintenance costs.

1. "Capital costs" consist of direct (construction) and indirect (nonconstruction and overhead) costs.

a. "Direct capital costs" include:

- (1) construction costs, costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure;
- (2) equipment costs, costs of treatment, containment, disposal and/or service equipment necessary to implement the action (these materials remain until the corrective action is complete);

- (3) land and site-development costs, expenses associated with purchase of land and development of existing property; and,
- (4) buildings and services costs, costs of process and non-process buildings, utility connections, purchased services and disposal costs.

b. "Indirect capital costs" include:

- (1) engineering expenses, costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;
- (2) legal fees and license or permit costs, administrative and technical costs necessary to obtain licenses and permits for installation and operations;
- (3) startup and shakedown costs, costs incurred during corrective measure startup; and,
- (4) contingency allowances, funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes and inadequate facility characterization.

2. "Operation and maintenance costs" are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The owner or operator shall consider the following operation and maintenance cost components:

- a. operating labor costs, wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;
- b. maintenance materials and labor costs, costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;
- c. auxiliary materials and energy, costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;
- d. purchased services, sampling costs, laboratory fees, and professional fees for which the need can be predicted;

- e. disposal and treatment costs, costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;
- f. administrative costs, costs associated with administration of corrective measure operation and maintenance not included under other categories;
- g. insurance, taxes, and licensing costs, costs of such items as liability and sudden accidental insurance, real estate taxes on purchased land or rights-of-way, licensing fees for certain technologies, and permit renewal and reporting costs;
- h. maintenance reserve and contingency funds, annual payments into escrow funds to cover both costs of anticipated replacement or rebuilding of equipment and any large unanticipated operation and maintenance costs; and,
- i. other costs, items that do not fit any of the above categories.

TASK III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The owner or operator shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. At a minimum, the following criteria will be used to justify the final recommended corrective measure or measures.

A. Technical

- 1. Performance - corrective measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference.
- 2. Reliability - corrective measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference.

3. Implementability - corrective measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be given preference.
4. Safety - corrective measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be given preference.

B. Human Health

The corrective measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide for the minimum level of exposure to contaminants are preferred.

C. Environmental

The corrective measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment are preferred.

TASK IV. REPORTS

A. Progress Reports

The owner or operator shall at a minimum provide DHS with signed, monthly progress reports containing:

1. a description and estimate of the percentage of the CMS completed;
2. summaries of all findings;
3. summaries of all changes made in the CMS during the reporting periods;
4. summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period;
5. summaries of all problems or potential problems encountered during the reporting period;
6. actions being taken to rectify problems;
7. changes in personnel during the reporting period;

8. projected work for the next reporting period; and,
9. copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Draft Corrective Measure Study (CMS) Report

1. The draft CMS report shall include a description of the facility, including at a minimum, site topographic map and preliminary layouts.
2. The draft CMS report shall include a summary of the corrective measure or measures including:
 - a. a description of the corrective measures and rationale for selection;
 - b. performance expectations;
 - c. preliminary design criteria and rationale;
 - d. general operation and maintenance requirements; and,
 - e. long-term monitoring requirements.
3. The draft CMS report shall include a summary of the RCRA Facility Investigation and impact on the selected corrective measures, including:
 - a. field studies (ground water, surface water, soil, air); and,
 - b. laboratory studies (bench scale, pick scale).
4. The draft CMS report shall include design and implementation precautions, including:
 - a. special technical problems;
 - b. additional engineering data required;
 - c. permits and regulatory requirements;
 - d. access, easements, right-of-way;
 - e. health and safety requirements; and,
 - f. community relations activities.

5. The draft CMS report shall include cost estimates and schedules, including:

- a. capital cost estimates;
- b. operation and maintenance cost estimates; and,
- c. project schedules (design, construction, operations).

C. Final Corrective Measure Study (CMS) Report

The owner or operator shall finalize the CMS Report by incorporating comments received from DHS on the Draft CMS Report.

D. Schedule for Report Submissions

The owner or operator shall provide a proposed schedule for submittal of the Draft CMS Report and Final CMS Report in the work plan for the CMS. Upon approval of this proposed schedule by DHS, or an alternative schedule as determined by DHS, the owner or operator shall provide the Draft and Final CMS Reports to DHS according to the approved schedule. Monthly progress reports shall be submitted to DHS with the first report due thirty (30) calendar days after approval by DHS of the schedule for report submissions.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3901

January 14, 1994

Todd S. Erickson
Department of the Navy
Naval Station
Long Beach, California 98022-5000

Subject: Review of the Draft Technical Memoranda and Work Plans for
the Naval Station Long Beach

Dear Mr. Erickson:

Enclosed please find the U.S. Environmental Protection Agency's (EPA's) comments regarding the Draft Risk Assessment Work Plan and Fish Sampling Plan for the Naval Station Long Beach, submitted on December 15, 1993. There are no comments regarding the Draft Technical Memoranda, Draft Investigation Derived Waste Management Plan, Draft Health and Safety Plan or Draft Data Management Plan for CTOs 015, 016 and 026.

We hope that these comments provide useful guidance in the preparation of the final documents. If you have any questions regarding these comments, please contact me at (415) 744-2321.

Sincerely,

A handwritten signature in cursive script, reading "Sheryl L. Lauth".

Sheryl L. Lauth
Remedial Project Manager

cc: Alvaro Gutierrez, DTSC
Alan Lee, Southwest Division
Denise Klimas, NOAA

**EPA's Comments Regarding the Draft Risk Assessment Work Plan
and the Draft Fish Sampling and Analysis Plan
Naval Station Long Beach**

**Specific Comments Regarding the Human Health Risk Assessment:
(Provided by EPA Toxicologist Dan Stralka, Ph.D.)**

1. Section 2.2.3.1.3 Receptor Data, Page 23. The first sentence should be changed to read that the boundary lines will include the closest schools, day-care centers, etc.
2. Section 2.2.3.2 Soil, Future Excavation Worker Exposure Scenario, Page 25. #5 Soil ingestion rate should be 480 mg/day per Standard Default Parameter memo.
3. Section 2.2.3.5 Fish Ingestion, Page 28. #2 The amount, types, and parts of fish ingested by the proposed receptor community should be checked with a survey of the local fishermen and consumers (i.e. the Navy creel census). The default use of 54 mg/day was derived from a national average food basket study and pertains only to fresh water fish. The average fish consumption from this source may be quite different.

**Specific Comments Regarding the Ecological Risk Assessment:
(Provided by EPA Ecological Risk Assessor Clarence Callahan, Ph.D.)**

1. Section 3.0 Baseline Ecological Impact Assessment, Page 33. The format does not follow any of the conventional EPA literature for ecological assessment (see: Norton, S.B., D.J. Rodier, J.H. Gentile, W.H. van der Schalie, W.P. Wood, and M.W. Slimak, 1992. A Framework for Ecological Risk Assessment at the EPA. Environ. Toxicol. and Chem. Vol 11(12) pp1663-1672 and other literature from the ECO Update series. The human health and the ecological assessment material should be separated even when there are overlapping uses of data.
2. Section 3.2 Technical Approach, Page 37. The "four basic elements" of the ecological risk assessment process are: 1) Problem Formulation; 2) Exposure; 3) Ecological Effects; and 4) Risk Characterization (Norton et al, 1992).
3. Section 3.2.1 Chemicals of Potential Concern, Page 37. Essentially the Chemicals of Concern are determined by comparing to background for all inorganics. Whereas all detected organics are COCs as they are not naturally occurring.
4. Section 3.2.2 Exposure Assessment, Page 37. The exposure assessment is not just limited to predicting exposure point concentration. This step must involve the incorporation of

all site specific information involving the biological/ecological attributes of the receptors to develop the site conceptual model and the strategy for ecological impact assessment.

5. Section 3.2.2 Exposure Assessment, Page 38, par 2. What is the basis for using a dilution of 12:1 for estimating the chemical concentrations in the water column. Why estimate the concentration in the water column, why not measure the concentration?

Section 3.2.2 Exposure Assessment, Page 38, par 6. What is the basis for using the 70 percent cutoff level? The requirement of 100 g minimum is too high. When the Macoma test is performed all COCs should be measured. This test does not call for a four day depuration in clean seawater, but 24 hours (Lee, II, H. B. Boese, J. Pelletier, M. Winson, D. Specht, and R. Randall. 1989. Guidance Manual: Bedded Sediment Bioaccumulation Tests. EPA/600/X-89/302.232pp).

6. Section 3.2.3 Toxicity Assessment and Risk Characterization, Page 39. The evaluation of toxicity impact should be separated from risk characterization. Toxicity assessment as it is used here is a preliminary assessment of toxicity impact, which is generally misnamed as "ecological effects" and sometimes referred to as ecological risk. There is no ecology involved at this point, perhaps a little biology, but mostly toxicity and not enough information is available to complete a risk assessment at this stage in the process.
7. Section 3.2.3.1 Chemicals in Water, Page 39. The no observable effects level (NOEL) is the appropriate standard by which potential effects are compared to, not LD or LC50s. The hazard quotient (HQ) is a ratio of the measured concentration of the particular chemical (COC) in the environmental medium to which the receptor species is exposed to, divided by a concentration that represents the NOEL of that same particular chemical (COC) for that particular endpoint being assessed for that particular receptor species.

The second paragraph is a very simplistic statement about the mechanics for the use of the HQ. The LC50 is not an appropriate standard for use in the HQ because by definition 50% of the exposed organisms will be killed when the HQ is equal to 1, which is not an appropriate nor acceptable level of protection.

Although storm events and vessel movements are episodic their effects may not be just acute. The event is short lived, but the exposure may or may not be short lived, however the effects may be acute or chronic depending upon the species, the COC and the endpoint selected.

8. Section 3.2.3.1 Chemicals in Water, Page 40, par 2. Even, or especially, with the use of the HQ there must be more than a single estimate of impact. There must be more than a single receptor for each pathway because no single receptor can represent a pathway; there must be multiple endpoints because no single process can represent a potential effect; there must be multiple measurements of the endpoints because no single estimate of effects can be represented by a single metric. As one might realize, this is an important part of the assessment process and with sufficient efforts the appropriate information can be obtained without having to repeat this step.
9. Section 3.2.3.2 Chemicals in Sediments, Page 40. My suggestion is that the Navy may not be ready to conduct bioassays at this time. The problem formulation step of the assessment has not been completed as yet. **What are the questions being addressed by the bioassays and what are the uses of these data?** The procedure for the statistical evaluation of the data must be provided. Survival is suggested as the endpoint being measured. What will these data mean if all test organisms die in Site 7 samples otherwise indicating acute toxicity? Will the Navy also measure the sediment concentration and the organism concentration of the COCs to show at least a plausible relationship? Why would the Navy not want to estimate the exposure-response curve, which could yield the LC50, the NOEL, and the LOEL if properly designed? This would suggest a target clean-up concentration for sediments if remediation is required. How will the information be used in the process? What is the next step after the bioassays are completed? If these tests were performed for samples with very high concentrations of key contaminants, then these data would be useful on a site wide basis to define these important statistics. We would be happy to provide additional information and/or guidance to the Navy prior to performance of bioassays to ensure that these questions are addressed.
10. 3.2.4 Uncertainty Analysis, Page 41. The uncertainty analysis is the key to the overall screening effort. The analysis must identify the data gaps and the effort must be continued to verify and validate the data used in the hazard quotient.
11. Page 47, Appendix A. Background concentrations of metals for proposed statistical methodology (sic).

We believe the method proposed to determine background concentrations may not be conservative enough. We would suggest that the data collected first be presented graphically with an explanation of the method for handling "outliers". Secondly we would like to see a plot of the data with the 95

confidence limit and tolerance limit along with a discussion of the proposed method for comparing the metals data to background. These data along with the proposed evaluation method can then be evaluated by EPA. We would then either approve the method proposed or suggest an alternate method to the Navy.

Comments Regarding the Draft Fish Sampling and Analysis Plan:

General Comments:

1. As stated in the Plan, the proposed fish sampling and risk assessment do not address the biological effects to the fish. As outlined in the RI/FS Work Plan, the biological effects to fish will be estimated from tissue concentrations of sediment dwelling organisms using a bioaccumulation model. As part of the modeling effort, a validation/verification step is recommended to reduce the uncertainty or to confirm the modeling results. We recommend that the fish sampling proposed for human health risk assessment be integrated with fish sampling for the ecological assessment to directly determine the concentrations of contaminants in fish and assess impacts to the food web (i.e. sediment-sediment organism-fish-piscivorous birds). As the fish skin, head and bones as well as the fillets will be analyzed for the human health risk assessment, it may be a cost effective approach to analyze total body burden and/or target organs (i.e. kidneys or reproductive organs) to collect data for evaluation in the ecological risk assessment. We would be happy to provide input and/or guidance regarding an effective approach.
2. Was the proposed number of fish to be collected based on a statistical evaluation? What type of statistical comparison, if any, is proposed to determine if there is a significant difference between the concentration of contaminants detected in the Site 7 versus reference location. We would suggest providing a brief description of how the data will be evaluated for use in the human health risk assessment.
3. The detection limits proposed in Table 2 are recognized levels for human health risk at 10^{-6} . Should fish tissue be analyzed for ecological effects, the detection limits must be lower (approximately 1.0 ppm for metals).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3001

March 21, 1994

Alan K. Lee
Department of the Navy
Southwest Division NAVFACENGCOM
Environmental Division
1220 Pacific Highway Room 18
San Diego CA 92132-5181

re: CERFA EBS for Naval Station Long Beach

Dear Mr. Lee:

We appreciated the opportunity to review the draft Community Environmental Response and Facilitation Act (CERFA) Report for the Long Beach Naval Station, and are submitting the enclosed comments. We have reviewed the Long Beach Naval Hospital EBS, but have since been informed that the CERFA determinations will be substantially revised based upon the recent detection of contamination from USTs. Therefore, we do not include comments on the Hospital EBS at this time. However, many of the following comments on the Naval Station EBS also apply to the Long Beach Naval Hospital EBS and may be helpful in revising the EBS for the Hospital.

While EPA Region 9 does not have concurrence authority on the Navy's CERFA conclusions for Long Beach Naval Hospital and Long Beach Naval Station, we are submitting these comments in the spirit of our participation on the BRAC Cleanup Team for NAVSTA Long Beach, to provide guidance consistent with comments we have offered on several other bases, both NPL and non-NPL, and to provide EPA's interpretation of the requirements of CERFA (CERCLA §120(h)(4)). Most of the attached comments do not request new evidence, but rather suggest clarification of site information used to make CERFA determinations.

As part of this review, we have discussed the verbal comments offered by the California Department of Toxic Substances (DTSC), and have submitted the following comments for their review. Our discussion with DTSC confirmed that the Navy and DTSC have agreed that based on several changes made to the EBS after it was released in December, that the 90-day comment period initially requested has been extended. We concur with the approach DTSC has taken in analyzing the document and are submitting our comments to augment DTSC's more detailed remarks.

GENERAL COMMENTS**Identification of Uncontaminated Property:**

The EBS for Long Beach Naval Station identifies CERFA parcels by describing contaminated property and then concluding that any property not identified as contaminated must be CERFA property: "By process of elimination, the remaining areas have been identified as properties that satisfy the definition of "uncontaminated" under CERFA, and are therefore eligible for transfer in accordance with DoD guidelines." [p. 6-3, NAVSTA EBS] To establish these conclusions by a process of elimination implies that the uncontaminated areas were not examined for purposes of making a CERFA determination. CERCLA §120(h)(4) requires that the "uncontaminated" status of a parcel be verified using several specific methods such as visual inspections, aerial photographs, and so forth. Therefore, it would be helpful for the Navy to discuss the specific conclusions for each uncontaminated parcel based on the evidence examined. For example, for a clean area, such evidence could include:

- Name/number of area.
- Results of a visual inspection conducted to determine the presence of petroleum products. Documentation that no petroleum pools or stains encountered.
- Statement that a review of historical records indicates that there is no evidence of storage activity, a past release, or disposal of hazardous substances in this area.
- Statement that a review of aerial photographs presents no evidence that the area was once used in a manner that would lead to a conclusion that storage, release, or disposal of hazardous substances had or could have occurred.
- Results of interviews with current and past employees confirm that the area is free of actual or suspected contamination.

Presence of Petroleum Products:

CERCLA §120(h)(4) states that the U.S. "shall identify the real property on which no hazardous substances and no petroleum products or their derivatives were stored for one year or more, known to have been released, or disposed of. Such identification shall be based on an investigation of the real property to determine ... the presence ... of any hazardous substance or any petroleum product or its derivatives, including aviation fuel and motor oil ...".

Given this requirement, it is suggested that the EBS discuss areas on which petroleum products may have been spilled, such as paved roads, parking lots, and surface runoff areas. If the Navy intends to identify areas where these spills have occurred as

uncontaminated, a rationale should be provided to support the conclusion that this property meets the CERFA criteria.

Presence of Pesticides:

Citing CERCLA §120(h)(4) again, the EBS is intended "determine ... the presence ... of a release or threatened release of any hazardous substance ...". Because pesticides are hazardous substances, areas on which pesticides have been used should be documented in the EBS. The EBS should discuss where pesticides were applied, and provide the Navy's rationale for whether or not property on which this application occurred is considered uncontaminated pursuant to §120(h)(4).

Possible Source Areas:

As mentioned in the BCP Workshops and outlined in EPA's letter dated January 31, 1994, we believe that there may be additional source areas at the Site that should be included in the EBS for the Naval Station. These areas include the dry cleaners at Building 46 and the former paint cleaning operations within Building 8 as identified in the Preliminary Assessment Study dated August 1983.

SPECIFIC COMMENTS

1. P. VI. "This EBS was prepared in accordance with DoD policy, which states that the evaluation under CERFA may consider only existing available information." However, CERCLA §120(h)(4) states that "such identification shall also be based on sampling, if appropriate under the circumstances." To be more accurate, the "existing available information" language should be revised so that it is clear that the Navy identified uncontaminated property pursuant to all review activities specified in §120(h)(4).
2. P. VII. "To account for migration of chemicals from known, likely, or potential properties of concern, there are buffer zones (for "properties requiring further study") around the above properties." This sentence seems to indicate that buffer zones are not given for properties with "known or likely presence of environmental concern." However, page 6-1 states, "Buffer zones were established to allow for any migration from areas designated in either category 2. or 3.," indicating that buffer zones were created for both types of property. The executive summary's discussion of buffer zones should clarify where and how buffer zones were drawn.
3. P. VII. "By process of elimination, the remaining area, a 'property with no suspected environmental concerns', qualifies as uncontaminated as defined by CERFA, and is therefore eligible for

transfer under CERFA." See general comments. Please note that property which has had a release of hazardous substance or petroleum -- whether it has been remediated or not -- does not qualify as uncontaminated as defined by CERCLA §120(h)(4) or as defined by the Department of Defense BRAC Cleanup Plan Guidebook.

4. P. 1-1 "CERFA further requires . . . this report." §120(h)(4) notes that sampling shall be conducted as appropriate; see comment 1.

5. P. 1-1 "However, should . . . [CERCLA] Section §120(h)(3)(c)." It appears that the reference should be to §120(h)(3)(B)(ii) and §120(h)(4)(D). The section referenced on this page addresses access, not future remedial actions.

6. P. 4-4. See general comment above on petroleum products. It is very likely that spilled petroleum products were carried into the storm sewers.

7. P. 4-4. The discussion of the main gravity drain is not clear. It appears from the map that all sewer pipe areas are areas of known or likely presence of environmental concern, but the discussion in this section implies that the main gravity drain is an area of no environmental concern. A statement is provided that inflow of water disqualifies this portion of pipe as an area of environmental concern; it is unclear why inflow would eliminate concern. At other facilities there has been documentation of contamination flowing out of leaking sewer pipes into groundwater. It would be helpful to clarify this conclusion.

8. P. 4-5. Is the medical waste collection point at NRMCC clearly marked on the site figures? It is unclear how the Navy categorized this collection point, which would not appear to qualify as uncontaminated under CERFA.

9. P. 4-5. References to USTs on LBNSV property upgradient to NAVSTA that are considered potential sources of contamination: To clarify the extent of contamination migrating onto NAVSTA, it would be helpful to document whether any other areas are considered to be potential sources of contamination that may have migrated onto the NAVSTA.

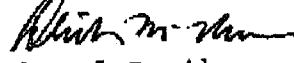
10. P. 6-3. "Groundwater extraction should be restricted pending testing." This statement raises the question of how confident the Navy is about whether contaminated groundwater exists beneath parcels on the western edge of the NAVSTA. As you are aware, property overlying contaminated groundwater does not meet the definition of uncontaminated under CERFA. If pending testing is necessary, it may be appropriate for this testing to occur before property on the western edge of NAVSTA is classified as uncontaminated.

5

11. P. 6-3. "By process of elimination." See general comments.

If you have questions concerning these comments, please contact me at (415) 744-2410 or Deirdre Nurre, Base Closure Specialist, at (415) 744-2246.

Sincerely,


For: Sheryl Lauth
Remedial Project Manager

cc: Maria Gilette, Cal/EPA DTSC Region 4



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3901

April 5, 1994

Captain Barry Janov
Commander Long Beach Naval Shipyard
300 Shipjack Road
Long Beach, California

Captain John Jones
Commander Long Beach Naval Station
Long Beach Naval Station
Long Beach, California 90822-5000

Subject: Final Technical Memorandum, Investigation Derived Waste Management Plan, Health and Safety Plan, Data Management Plan, Fish Sampling Plan and Risk Assessment Work Plan for the Naval Station Long Beach

Dear Captains Janov and Jones:

The Environmental Protection Agency~~s~~ (EPA~~s~~) has completed its review of the Final Technical Memoranda, Investigation Derived Waste Management Plan, Health and Safety Plan, Data Management Plan, Risk Assessment Work Plan and Fish Sampling Plan for the Naval Station Long Beach, dated January 30, 1994 for CTOs 015, 016 and 026. We have reviewed the subject documents along with Bechtel's response to comments table dated February 10, 1994.

EPA has no comments regarding the Final Technical Memoranda, Investigation Derived Waste Management Plan, Health and Safety Plan, or Data Management Plan. EPA is not in agreement with some of the NAVYs comment responses regarding the Risk Assessment Work Plan and Fish Sampling and Analysis Plan. It was outlined in the NAVYs responses that EPA's comments specific to water column sampling and the use of the fish tissue data as part of the ecological assessment were not incorporated into these documents as they required revision to the existing Clean I RI/FS Work Plan. However, both of these issues have been addressed as part of the technical memorandum submitted to the agencies on April 1, 1994 which modifies the scope of work presented in the Clean I RI/FS Work Plan.

Therefore, while EPA is not in agreement with some of the NAVYs responses to our comments with respect to CTO 26, we are encouraged by the NAVYs indication that the scope of work for CTO 26 is currently being revised to address agency concerns. We suggest that the NAVY provide EPA with an indication of how the changes to CTO 26 will effect the subject documents and propose a method for addressing the outstanding issues related to the ecological risk assessment. Based on the ambitious schedule for CTO 26, it may be more appropriate to address these comments as part of a technical memorandum rather than revising the final documents. We suggest discussing these issues at the April 13, 1994 meeting regarding CTO 26.

If you have any questions please contact me at (415) 744-2410.

Sincerely,

A handwritten signature in cursive script, reading "Sheryl L. Lauth". The signature is written in dark ink and is positioned above the printed name and title.


Sheryl L. Lauth
Remedial Project Manager

cc: Alvaro Gutierrez, DTSC
Alan Lee, Southwest Division
Denise Klimas, NOAA

DATE: 6-27-94

FAX TRANSMISSION

To	Name: David Pease		
	Organization: Dept of Navy		
	Mail Stop:		
	FAX No.:	Area Code 310	Number 547-6291
	Verification No.:	Area Code	Number

From	Name: Sheryl Lavitt		
	 U.S. Environmental Protection Region 9, Field Operations, HWMD, \$Fund 75 Hawthorne Street San Francisco, California 94105		
	Division / Branch (mail stop): H-9-2		
	Phone No.:	Area Code 415	Number 744-2410
	Fax No.:	Area Code 415	Number 744-1916

Pages	(Including cover)
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Subject	
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Note	
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DATE:

6-27-94

FAX TRANSMISSION

To

Name:

Alvaro Gutierrez

Organization:

Mail Stop:

FAX No.:

Area Code

Number

Verification No.:

Area Code

Number

From

Name:

Sheryl Lauth



U.S. Environmental Protection
Region 9, Field Operations, HWMD, \$Fund
75 Hawthorne Street
San Francisco, California 94105

Division / Branch (mail stop):

H-9-2

Phone No.:

Area Code
415

Number

744 2410

Fax No.:

Area Code
415

Number

744 - 1916

Pages

(Including cover)

Subject

Note

Hi Alvaro—

Improving these comments to the Navy
today. Call me if you have any comments/questions.

Thanks.

Sheryl



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3901

July 1, 1994

Mr. Alan Lee
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5181

Subject: Memorandum sent to Dr. John Christopher Regarding the
Proposed Screening Criteria for Site 6B, dated June 20, 1994

Dear Mr. Lee:

The Environmental Protection Agency (EPA) has reviewed the subject memorandum dated June 20, 1994. This memorandum was reviewed by EPA's toxicologist Dr. Sophia Serda. In addition, Dr. Serda reviewed a copy of DTSC's comments regarding the subject memorandum. As to avoid unnecessary duplication of comments, I have attached a copy of a memorandum addressed to me from Dr. Serda regarding the subject memorandum that indicates our concurrence with the comments submitted by DTSC. As outlined in DTSC's comments, EPA and DTSC are currently working together to reach agreement on limited revisions to the Region 9 PRGs. The eight Region 9 PRGs that are likely to be revised are listed in the attached memorandum. EPA will make every effort to expedite the revision process and will provide the revised PRGs to the NAVY as soon as available. As outlined in the attached memorandum, we do not anticipate an impact to the overall project schedule.

If you have any questions regarding this information, please contact me at (415) 744-2410.

Sincerely,

A handwritten signature in cursive script, reading "Sheryl Lauth", is written over the typed name.

Sheryl Lauth
Remedial Project Manager

MEMORANDUM

To: Sheryl Lauth (H-9-1)
Remedial Project Manager

From: Sophia Serda, Ph.D. (H-9-3) *SS*
Regional Toxicologist

Subject: Naval Station Long Beach: Screening Criteria for Site 6B Site Inspection

Date: June 29, 1994

As you know, I have received via fax from John Christopher, DTSC Toxicologist, the memorandum that he sent to his project manager, Alvaro Gutierrez, regarding the Preliminary Remediations Goals (PRGs) for soils and ground water for Site 6B. I concur with the information presented in this memorandum regarding the agreement reached between DTSC and EPA and I will make every effort to expedite the process! I feel however, this should not cause any delay to SWDIV because it is my current understanding that the PRGs will change for approximately 8 chemicals: benzo(a)pyrene, beryllium, cadmium, chromium VI, dibromochloropropane, nickel, PCBs, and PCE. I will keep you informed if any of this information changes.

If you have any questions regarding my comments, I can be reached at (415) 744-2307.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

August 1, 1994

MEMORANDUM

SUBJECT: Protocol for CERFA Conclusions on Property Impacted by
Pesticides or Herbicides

FROM: John Kammerer *[Signature]*

TO: Base Closure RPMS
H-9 Managers
H-9 Toxicologists
Kathleen Johnson, CRC
Deirdre Murte
Esther Hill

In response to questions about pesticide application, and the interpretation of EPA's April 19, 1994 policy on identifying uncontaminated property on closing bases pursuant to CERFA, Region 9 has prepared the attached protocol for making CERFA conclusions.

RPMS managing BRAC-III bases should share this protocol with their military service and state counterparts. Those BRAC I&II bases that have already gone through CERFA may also find this protocol helpful for future property transfers. I plan on distributing this to my counterparts on the California Base Closure Environmental Committee from the military services and the State of California.

Esther Hill and Sofia Serda deserve credit for taking the lead in drafting this protocol. If you have questions, or if you gain a useful perspective from using this protocol, please let Esther, Sofia, or me know.

cc: Bob Carr, EPA-HQ

8/1/94

Region 9 Protocol for CERCLA Conclusions on Property Impacted by Pesticides or Herbicides

National Guidance

As part of the implementation of the Community Environmental Response Facilitation Act (CERFA), EPA developed guidance (OSWER Directive 9345.0-09, April 19, 1994) on the approach to take in determining whether EPA should concur with a military service on the identification of property as "uncontaminated" where some limited quantity of hazardous substances or petroleum products have been stored, released, or disposed. The guidance noted that in some instances it may be appropriate to concur if the information provided by the military service indicates that the storage, release, or disposal would not be expected to pose a threat to human health or the environment.

Areas impacted by the application of pesticides or herbicides are discussed specifically in the guidance as areas that EPA may concur on depending on the circumstances. If there is an indication that pesticides were extensively applied, EPA may require that concurrence be conditioned on information on residual levels of pesticides. The guidance notes that decisions on whether to concur with the military service are to be made on a case-by-case basis. Further, the authority to make these determinations for bases on the NPL has been delegated to EPA's Regional Offices.

Region 9 Implementation of CERFA

During the CERFA process for BRAC I&II bases, Region 9 requested that the military services provide information on whether pesticides were applied, rates of application, and residual levels of pesticides in the environment. This information was not provided formally, but we were informed that in general pesticide application was routine at all parts of military bases. Region 9's approach for considering pesticide application takes into account the land use of property on which pesticides were applied. If property on which pesticides were applied was generally used for residential or educational purposes, Region 9 concurred with the military services' conclusion that property could be considered CERFA uncontaminated. Our concurrence letters noted that apparently pesticides containing hazardous substances had been applied, but information provided by the military services does not indicate that residual levels, if any, pose a risk to public health and the environment. We also recommended that prior to the transfer of this property, the military service provide positive confirmation that residual levels, if any, do not pose a threat to human health or the environment.

If property was used for commercial or agricultural purposes, and apparently received heavy applications of pesticides (e.g. golf courses, cultivated areas), Region 9 withheld concurrence. We noted that we would be willing to reconsider this decision if information were provided on application of pesticides and residual levels. We noted that in one case (Mather AFB) the military service was able to document via sampling results that residual levels of pesticides on a golf course did not pose a threat to human health or the environment.

For those cases where additional information was necessary in order for Region 9 to concur that property is uncontaminated, we informed the military service that we would assist in developing a sampling strategy to determine whether residual levels of pesticides or herbicides posed a threat. This document lays out a basic approach for this determination.

1) Records Search

The first step is to review records at the installation on the storage and use of pesticides and herbicides. This information may have been maintained by the base entomologist, the bioenvironmental engineering division, or the county agriculture department. A records search is an essential first step that will help focus the sampling by identifying what pesticides and herbicides need to be analyzed and where to sample. While conducting the record search the following questions should be kept in mind:

Did the base have standard procedures for application of pesticides and herbicides? If so, do these procedures indicate that some areas may have a higher concentration of residuals? For example, some bases as a routine matter applied more herbicides on the sand traps of golf courses to keep them free of weeds.

Is there any record of accidental spills?

What were the specific chemicals used? How often were they reordered?

Theoretically, it is possible that if detailed records are available, the records search may provide a basis for a determination that residuals do not pose a threat to human health or the environment without sampling. For example, records may indicate that the types of pesticides and herbicides applied are not persistent, and that application was infrequent. However, in most cases the records search will be used to plan the necessary sampling.

The objective of the record search is to produce a summary of the available information regarding known or potential sources of

pesticide/herbicide contamination. Additional factors related to the soil pathways include; topography of the site and surrounding areas, evidence of environmental release at the site (e.g. stained soil and historical/current aerial photos).

2) Sampling Plan

Given the information gathered through the records search, a plan will need to be developed for sampling at the likely areas of highest concentration, which may include a runoff area, spill area, or mixing/handling area. Areas with little known and suspected contamination may require only one or two samples taken to represent the general condition of the property.

The objective of the sampling plan is to provide the rationale for choosing the locations, number of samples, analytical parameters and detection limits which will ensure collection of data that are adequate to estimate a threat to human health and the environment.

3) Risk Analysis

Once sampling is completed and results validated, the maximum concentrations detected should be compared to the Region 9 Preliminary Remediation Goals (PRGs) to determine whether concentrations pose a risk to public health. If more than one pesticide or herbicide are detected, the multiple chemical additivity must be considered at the site. This can be done by calculating the risk based on the PRGs. In addition to comparing residual levels to PRGs, the following questions must be addressed:

Are the risks to ecological receptors significant at the site?

Are there likely human exposure pathways such as indoor exposure, indirect exposure through local fish exposure or consumption of locally raised beef dairy or other livestock?

Do site conditions exhibit unusually high levels of exposure to humans or environmental receptors (e.g. high fugitive dust levels, direct conduit to groundwater)?

If any of these conditions exist at the site then the comparison to PRGs may not be sufficient and a more extensive risk analysis would be required to conclude that an area is uncontaminated pursuant to CERCLA.

The objective of the risk analysis is to determine whether concentrations of pesticides/herbicides exceed

pesticides/herbicides concentrations associated with a significant risk to public health or the environment.

References

Region IX Preliminary Remediation Goals (PRGs) Updated half yearly, Current addition, Second Half 1994.

OSWER Directive 9345.0-09, "Military Base Closures: Guidance on EPA Concurrence in the Identification of Uncontaminated Parcels under CERCLA Section 120(h)(4)," April 19, 1994



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

August 4, 1994

Naval Station Long Beach
Bldg 1, Code N46.2
Long Beach CA 90822-5000
Attn. David Pease

Subject: Draft Final RI/FS Risk Assessment Work Plan CTO-015/016
for Naval Station Long Beach

Dear Mr. Pease:

The Environmental Protection Agency (EPA) has received the Draft Final RI/FS Risk Assessment Work Plan CTO-015/016. EPA had very minor comments on the human health portion of the final Risk Assessment Work Plan dated January 30, 1994 and did not request the NAVY revise the final Work Plan. It was our understanding that the subject document was to incorporate minor changes to exposure pathways, as agreed to in the June 16, 1994 meeting, and would require limited review by the agency. However, the subject document has been completely rewritten with no discussion of the rationale for revising the June 30, 1994 document or the relationship between the January 30, 1994 and June 30, 1994 documents. We would suggest incorporating some discussion regarding the two documents into the introduction section of the June 30, 1994 document for clarification.

Attached is a copy of the Memorandum from Dr. Sophia Serda regarding comments on the draft final document. As outlined in the Memo, Dr. Serda reviewed the subject document as a supplement to the January 30, 1994 document with the assumption that the site specific information provided in the original January 30, 1994 Work Plan would be carried through to the final risk assessment.

If you have any questions or comments regarding this letter, please contact me at (415) 744-2410.

Sincerely,

Sheryl Lauth
Sheryl Lauth
Remedial Project Manager

cc: Alan Lee, Southwest Division
Alvaro Gutierrez, DTSC

MEMORANDUM

To: Sheryl Lauth (H-9-1)
Remedial Project Manager

From: Sophia Serda, Ph.D. (H-9-3) *SS*
Regional Toxicologist

Subject: Review of the Draft Final RI/FS Risk Assessment Work Plan for Long Beach Naval Shipyard , Long Beach, Dated June 30, 1994.

Date: August 4, 1994

GENERAL COMMENTS

1. The title/signature page of the document states that this document is the work plan for the Long Beach Naval Shipyard yet the text states that this is the work plan for the Long Beach Naval Station. Correct this discrepancy.
2. The *Final Risk Assessment Work Plan Remedial Investigation/Feasibility Study Sites 1,2,3,4,5,6a and 7, Naval Station Long Beach, dated January 30, 1994* was approved by the Agency. It was the Navy's contractor that wanted to change a few exposure pathways and delete the air modelling effort (NOTE: changes were not initiated by EPA). These minor changes to the Risk Assessment Work Plan were verbally agreed to at a lunch time working meeting on 6/16/94. I anticipated very few changes would be made to the Risk Assessment Work Plan. However, the document I received for review as the Risk Assessment Work Plan for the Naval Station Long Beach has undergone extensive revisions. In fact it appears to be entirely rewritten when an entirely new document was not warranted.

I have not done a intensive line by line comparison of the approved *Final Risk Assessment Work Plan Remedial Investigation/Feasibility Study Sites 1,2,3,4,5,6a and 7, Naval Station Long Beach, dated January 30, 1994* and this current Risk Assessment Work Plan. I view the current Risk Assessment Work Plan as a supplement to the original Work Plan that was approved by the agency.

If you have any questions regarding my comments, I can be reached at (415) 744-2307.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

September 15, 1994

MEMORANDUM

To: Mike Radecki, Southwest Division

From: Sheryl Lauth, EPA *SL*

Subject: August 16, 1994 Monthly Status Meeting Minutes

CC: Dr. Clarence Callahan, EPA
Mr. Alvaro Gutierrez, DTSC
Mr. Omer Kadaster, Bechtel

I have reviewed the draft meeting minutes provided to me via facsimile on September 9, 1994. In general, the draft minutes were complete and accurate. I am, however, providing these comments for further clarification of my understanding of the issues raised and the agreements reached during the meeting. I was pleased at the level of detail presented in the minutes and would encourage the Navy to continue to provide this level of effort for future meeting minutes.

As we mentioned several times in the August meeting, EPA feels that this sampling effort will be of limited value unless the fish tissue data can be tied to the sediment sampling results. Further, we are still unclear what "support role" these data will provide.

As fish tissue collection has been added to the ecological assessment for the site, we still believe development of a conceptual site model, including the fish data, is a necessary step. Both Clarence and I requested the fish data collection task be incorporated into the decision tree diagram that was presented in Tech Memo #4. We understood from the meeting that this will be included in Tech Memo #6.

The statement attributed to me on Page 3 regarding the suggestion that the existing plan be discarded is not accurate. I suggested that the plan present the sampling and analysis information **only** and that the methods for data interpretation be included in Tech Memo #6. I suggested this because most of the comments provided by EPA on the Draft Fish SAP were related to data interpretation and consistency among documents.

To clarify our position in relation to your summary observations (provided on Page 4), 1) we question the usefulness of collecting fish data at this time if these data can not be tied back to the sediment data and 2) it was our understanding that our outstanding comments would be resolved as part of Tech Memo #6.

Although there are still some aspects of the ecological screening assessment that we do not agree with, we do understand that the Navy has decided to proceed with the fish collection as a screening assessment with the intention of determining if further action is warranted. Therefore, we agreed at the meeting that: 1) the Navy would develop a more comprehensive list of fish species, 2) the Fish SAP would be revised to present only the fish sample collection and analysis methodology (rather than the strategy for data interpretation), and 3) Tech Memo #6 will present the rationale and strategy for interpretation of the fish tissue data in relation to the sediment and bioassay data collected within the Harbor.

Finally, as the Navy has already implemented the Final Fish SAP and our comments regarding the Draft Fish SAP will be incorporated into Tech Memo #6, we will not be submitting formal comments on the Final Fish SAP. We do, however, look forward to receiving and providing comments on the Draft Tech Memo #6.

I look forward to seeing you at the next status meeting. If you have any questions regarding this memo, please call me at (415) 744-2410.



DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND DETACHMENT
RADIOLOGICAL AFFAIRS SUPPORT OFFICE (RASO)
NWS P.O. DRAWER 260
YORKTOWN, VA 22691-0260

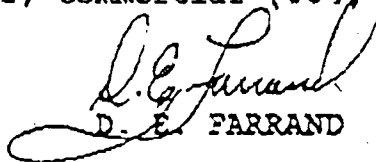
IN APPLY REFER TO.

5100/62474
Ser: 02/02A/ 00878
17 OCT 1994

From: Officer in Charge, Naval Sea Systems Command Detachment,
Radiological Affairs Support Office (RASO)
To: Commander, Western Division, Naval Facilities Engineering
Command (ATTN: Larry Lind)
Subj: REVIEW OF PRELIMINARY DRAFT BASEWIDE ENVIRONMENTAL
BASELINE SURVEY FOR NAVAL RESERVE CENTER, PACIFIC GROVE
Ref: (a) Meeting btwn WESTNAVFACENGCOM (L. Lind)/NAVSEADET RASO
(LCDR Frago) of 28 Sep 94
(b) Preliminary Draft Basewide Environmental Baseline
Survey For Naval Reserve Center, Pacific Grove,
Contract N624-74-92-D-3607

1. As requested during reference (a), NAVSEADET RASO has reviewed reference (b) and conducted a records search for information on the potential use of radioactive material at the Naval Reserve Center, Pacific Grove facility. There is no historical evidence to indicate that radioactive materials were used or disposed of at the facility by either its current or previous Naval tenants. There remains the possibility, however, as with any building, that consumer products containing radioactive material are present, such as smoke detectors or self luminescent exit signs.

2. NAVSEADET RASO point of contact is LCDR L. L. Frago or Mr. R. W. Lowman, DSN 953-4692, commercial (804) 887-4692.


D. E. FARRAND

Copy to:
CNO (N45)
NAVSEASYS COM (07R)



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

5090
Ser 1170/343
06 DEC 1994

From: Commander, Long Beach Naval Shipyard
To: Chief of Southern California Operations,
John E. Scandura, California Environmental Protection
Agency, Department of Toxic Substances Control (DTSC)
Office of Military Facilities

Subj: AMENDED ACTION MEMORANDUM FOR REMOVAL ACTION AT LONG BEACH
NAVAL SHIPYARD, INSTALLATION RESTORATION (IR) SITE 12

Facility ID Number: CA6170023109

Category of Removal: Time Critical

Encl: (1) AMENDED Action Memorandum for Removal Action at Long
Beach Naval Shipyard, Site 12, Long Beach, California

1. Enclosure (1) provides our ACTION MEMORANDUM (AMENDED December 5, 1994 to incorporate DTSC comments) which documents for the Administrative Record the Department of the Navy's decision to undertake a removal action at Installation Restoration Site 12. The Department of Defense has the authority to undertake Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) response actions, including removal actions, under 42 U.S.C. § 9604, 10 U.S.C. § 2705 and Federal Executive Order 12580.

2. Conditions at the site meet the criteria for initiating a removal action under § 300.415 (b) (2) of the National Contingency Plan (NCP). Those same conditions, if not addressed, may pose a potential threat of off-site hazardous substance migration resulting in the potential for human exposure and endangerment to the environment.

3. The removal action commenced on July 5, 1994. Onsite activities are expected to continue through October 3, 1994. The estimated cost of this action was \$129,000.

4. Points of contact are Mike Radecki, Remedial Project Manager, Southwest Division, Naval Facilities Engineering Command, at (619) 532-2450 or C. Anna Ulaszewski, IR Program Manager, Long Beach Naval Shipyard, at (310) 547-7868.


T. J. ULASZEWSKI
Acting

John E. Scandura
December 6, 1994
Page 2

Mr. Albert Arellano, Jr., P.E.
Unit Chief
Region 4 Base Closure
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 425
Long Beach, California 90802-4444

Mr. Alvaro Gutierrez
Base Closure Team, LBNC
Region 4 Base Closure Branch
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 425
Long Beach, California 90802-4444

Mr. J.E. Ross
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Mr. Hugh Marley
Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

ACTION MEMORANDUM - AMENDED

DATE: September 1, 1994, AMENDED December 5, 1994

SUBJECT: Action Memorandum for Removal Action at Long Beach Naval Shipyard, Site 12, Long Beach, California

Facility ID Number: CA6170023109

Category of Removal: Time Critical

National Significance: None

Status: Non-NPL

I. PURPOSE

The purpose of this ACTION MEMORANDUM is to document, for the Administrative Record, the Department of Navy's decision to undertake a removal action at Site 12 at the Long Beach Naval Shipyard (Figure 1). Construction activities commenced July 5, 1994 and was completed October 3, 1994. The Department of Defense has the authority to undertake Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions, including removal actions, under 42 U.S.C. § 9604, 10 U.S.C. § 2705 Federal Executive Order 12580.

The Remedial Investigation/Feasibility Study (RI/FS) Workplan for Long Beach Naval Shipyard, dated September 1993, recognizes the potential need for a removal action for Site 12. The conditions at the site meet criteria for initiating a removal action; under § 300.415(b)(2) of the National Contingency Plan (NCP); conditions at the site which, if not addressed, may pose a potential threat of off-site hazardous substance migration or air borne dispersion of contaminants, resulting in the potential for human exposure and endangerment to the environment.

II. SITE CONDITIONS AND BACKGROUND

The first evaluation of Site 12 was presented in the August 1983 Initial Assessment Study (IAS) for Naval Complex Long Beach, prepared by the Naval Energy and Environmental Support Activity (NEESA). Later reports, containing information on Site 12, include: the 1989 RCRA Facility Assessment (RFA) prepared by the California Department of Toxic Substances Control (DTSC), the November 1992 Site Inspection prepared by Jacobs Engineering Group, Inc. (Jacobs), the April 1993 RI/FS Workplan for Long Beach Naval Shipyard prepared by Jacobs, and the Draft Technical Memorandum - Aerial Photography Review and Revised Sampling Recommendations, Site 12, dated April 13, 1994 prepared by

Bechtel, Inc. Together these reports satisfy the Removal Site Evaluation requirements in § 300.410 of the NCP. These reports will be included in the Administrative Record. A review and analysis of these reports indicate that a removal action is necessary at Site 12.

A. SITE DESCRIPTION

1. Removal Site Evaluation

Site 12 is located in Parking Lot X, east of Skipjack Road on the eastern part of the Shipyard. The nearest building is Building 314, a hazardous waste storage facility located approximately 150 feet to the north. The site is relatively flat and covered by either gravel or asphalt. The nearest surface water body is the East Basin of Long Beach Harbor, which lies about 750 feet to the southwest.

The predominant soil types at Site 12 are silt and silty sand. Waste layers were observed at 0.0 to 2.5 feet below ground surface (bgs), 2.5 to 3.0 feet bgs and 5.0 to 6.5 feet bgs in borings at the site. The vertical and horizontal extent of the waste has not been determined. Groundwater elevation in this area is approximately 19.0 feet bgs measured during high tide.

General public access to Site 12 is limited by the security provided by the Shipyard.

2. Incident/Release Characteristics

(1) Sandblasting Grit Disposal Pit

Initially, it was reported that approximately 72 to 100 tons of sandblasting grit containing tributyltin defouling paint were disposed of between 1971 to 1975 at an unknown location in Parking Lot X. The disposal volume was reported to be 15x15 feet by 10 feet deep. This pit was not identified in an aerial photograph review of the site and the depositional area appears to cover a larger area in comparison to the previous understanding.

The aerial photos showed a dark discolored L-shaped area in the northern part of Site 12. It is assumed that this discolored area represents a waste disposal area which may contain sandblasting grit and other waste material. The 1973 photo sequences also showed piles of dark and light colored materials which were possibly used to fill the depressed area. The bulk of fill or waste material deposited in the L-shaped area appears to have occurred between 1971 and 1975. The photos also show that lesser amounts of material were deposited on the eastern portion of Parking Lot X after April 1973.

(2) Drum Crushing Area

Empty drums that contained hazardous substances were crushed on the northeast corner of Parking Lot X. The contents of the drums included epoxy-based paints, cleaning solvents such as trichloroethane and stoddard solvent, lube oils and other petroleum-based products. The area where these activities were conducted is approximately 100 feet by 120 feet, and was once enclosed by a chain link fence.

3. Quantities and Types of Substances Present

In 1989, 30 boreholes were augured and 63 soil samples were taken. Volatile Organic Compounds (VOC's), semivolatiles, metals, and total recoverable petroleum hydrocarbons (TRPH) were found at concentrations above detection limits. Detailed information concerning the field investigation can be found in the November 1992 Site Inspection Report and the April 1993 Remedial Investigation/Feasibility Study (RI/FS) Work Plan.

CONTAMINANTS AT SITE 12 EXCEEDING SCREENING CRITERIA

DRUM CRUSHING AREA

Screening Evaluation Summary Soil

Chemical	Frequency Detected ^a	Range mg/kg ^b	Screening Criteria mg/kg	Reference ^c	Frequency Criteria ^d Exceeded
VOC's					
Benzene	7/29	0.0004J-3.7	0.700	CECR	2/9
METALS					
Arsenic	3/3	2.5-9.6	0.33	CECR	3/3
Beryllium	3/3	Trace-0.3	0.082	CECR	2/3
Chromium	3/3	16-39	0.2	CECR	3/3
Copper	3/3	49-300	16.1	GP	3/3
Nickel	3/3	8.9-16	13.4	GP	2/3
Silver	3/3	0.9-1	0.122	GP	3/3
Total Petroleum Hydrocarbons	34/34	15/19,000	NA	NA	NA

OUTSIDE DRUM CRUSHING AREA

Screening Evaluation Summary for Soil

Chemical	Frequency Detected ^a	Range mg/kg ^b	Screening Criteria mg/kg	Reference ^c	Frequency Criteria Exceeded ^d
METALS					
Arsenic	9/9	2.6-10.1	.033	ECR	9/9
Beryllium	9/9	0.62-1.4	0.0913	CECR	9/9
Chromium (total)	9/9	11.5-29.6	0.2	CECR	9/9
Nickel	9/9	7.8-24.4	13.4	GP	2/9
Silver	1/9	1.1	0.122	GP	1/9

Screening Evaluation Summary for Groundwater

Chemical	Frequency Detected ^a	Range ug/l ^b	Screening Criteria mg/kg	Reference ^c	Frequency Criteria Exceeded ^d
SEMIVOLATILES					
Bis(2-ethylhexyl) phthalate	1/3	280H	5.9	AWQC-HH	1/3
METALS					
Arsenic	3/3	9U-55.1	36	EBE-E	1/3
Mercury	1/3	0.14B	0.025	EBE-HH	1/3
Nickel	1/3	8.5B	8.3	EBE-E	1/3
Total Petroleum Hydrocarbons	3/3	70-9,330	NA	NA	NA

^aFrequency detected = Number of samples with detectable levels of chemical divided by the total number of samples analyzed for chemical.

^bRange = Range of Analytical Results for all samples detected for chemical.

Data Qualifiers:

B

A value that is less than the detection limit, but greater than or equal to the instrument detection limit.

H

B & J apply

J

Indicates estimated value. This qualifier is used when mass

spectral data indicates the presence of a compound below the detection limit.

U Less than detection limit; value is the detection limit for that compound.

^cKey to screening criteria references

ECR	EPA Carcinogenic - Residential
CECR	CAL EPA Carcinogenic - Residential
GP	Groundwater Protection
EBE-HH	Enclosed Bays and Estuaries - Protection of Human Health
EBE-E	Enclosed Bays and Estuaries - Protection of Aquatic Life
AWQC-HH	Ambient Water Quality Criteria - Protection of Human Health

^dFrequency criteria exceeded = Number of samples where chemical exceeded the screening criteria divided by the total number of samples analyzed for the chemical.

B. OTHER ACTIONS TO DATE

1. Previous Actions

There have been no previous actions to date.

2. Current Actions

Site 12 is currently undergoing the Remedial Investigation/Feasibility Study (RI/FS) process as part of the Installation Restoration Program (IRP). The purpose of the RI/FS is to gather sufficient information to support an informed risk management decision to select a remedy. The RI/FS Workplan for Site 12 will include a risk assessment, and soil and groundwater studies to determine the extent of vertical and horizontal contamination. A detailed review of remedial alternatives will be conducted after which a final remedial action will be selected.

C. STATE AND LOCAL AUTHORITIES' ROLES

Because this site is not on the National Priorities List, the lead Federal agency is the Department of the Navy. The Navy's Southwest Division Naval Facilities Engineering Command (SOUTHWESTDIVNAVFACENGCOM) and Long Beach Naval Shipyard personnel work together to manage and coordinate the IRP. The Shipyard commander is responsible for executing the IRP. SOUTHWESTDIVNAVFACENGCOM coordinates, directs and reviews IRP work in order to assure compliance with the National Contingency Plan.

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is the lead State agency responsible for environmental restoration. DTSC is also the lead

State agency responsible for identifying the Applicable or Relevant and Appropriate Requirements (ARARs), and coordinating the review process for all State agencies involved. It is important to note that the current removal action is an interim action and does not address final remediation. Therefore, the removal action does not address the RCRA Part B permit corrective action protocol.

III. THREAT TO PUBLIC HEALTH OR WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. THREAT TO PUBLIC HEALTH AND WELFARE

Because the sample analyses indicate elevated metals concentrations in surface soils, the primary pathways of concern are direct contact and inhalation of windblown dust. Windblown dust has been observed in the area and is a concern. Direct contact with subsurface contamination could occur during excavation activities.

Contaminants in the soil may potentially leach to the groundwater, causing the groundwater to become contaminated, or move to other locations via surface runoff. These pathways can impact both humans and sensitive ecosystems.

B. THREAT TO THE ENVIRONMENT

Surface runoff currently flows to paved areas and is collected by nearby storm drains that discharge directly into the West Basin of Long Beach Harbor. Therefore, the primary related exposure pathway of concern is ingestion by aquatic organisms and subsequent uptake by humans or wildlife.

Wildlife and aquatic organisms can be impacted directly or indirectly by any of the exposure pathways mentioned above. The biological resources at Long Beach Naval Complex (Long Beach Naval Shipyard and Naval Station Long Beach) include threatened, endangered and special-status species, and sensitive ecosystems. Further details can be found in the April 1993 RI/FS Workplan.

C. LEVEL OF RISK

The RI/FS will assess the risk to human health and the environment posed by the contaminants at Site 12. Previous investigations have determined that the following metals maybe associated with the site: arsenic, beryllium, chromium, nickel, copper, lead, mercury, zinc and silver. Arsenic is a human carcinogen that has been associated with an increased frequency of skin or lung cancer when ingested or inhaled. Lead is an acute or chronic toxin and is particularly harmful to the blood-

forming and central nervous systems of children. Arsenic, beryllium and chromium were screened according to EPA carcinogenic residential exposure criteria. Copper, lead, mercury, nickel, silver and zinc were screened according to groundwater protection criteria. Volatiles and semivolatiles are also associated with the site.

To further identify specific metals and chemicals of concern, and to characterize the potential vertical and horizontal extent of contamination, additional sampling and analyses will be conducted as part of the RI/FS. A risk assessment will be conducted for those contaminants which exceed screening criteria.

IV. PROPOSED ACTIONS AND ESTIMATED COSTS

A. PROPOSED REMOVAL ACTION DESCRIPTION

The proposed removal action is the third alternative considered. This requires encapsulation (covering) of contaminated, unpaved soil at the site by applying 4 inches of asphalt. No soil will be removed from the site; site preparation includes minor grading and compacting.

B. DESCRIPTION OF ALTERNATIVE TECHNOLOGIES

Alternative 1: No Action

This action would not protect human health and the environment; therefore, it is unacceptable.



Alternative 2: Excavation and disposal of contaminated soil

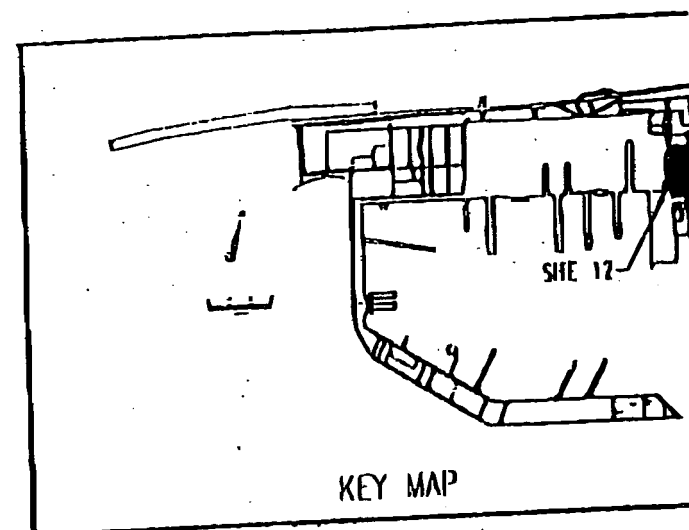
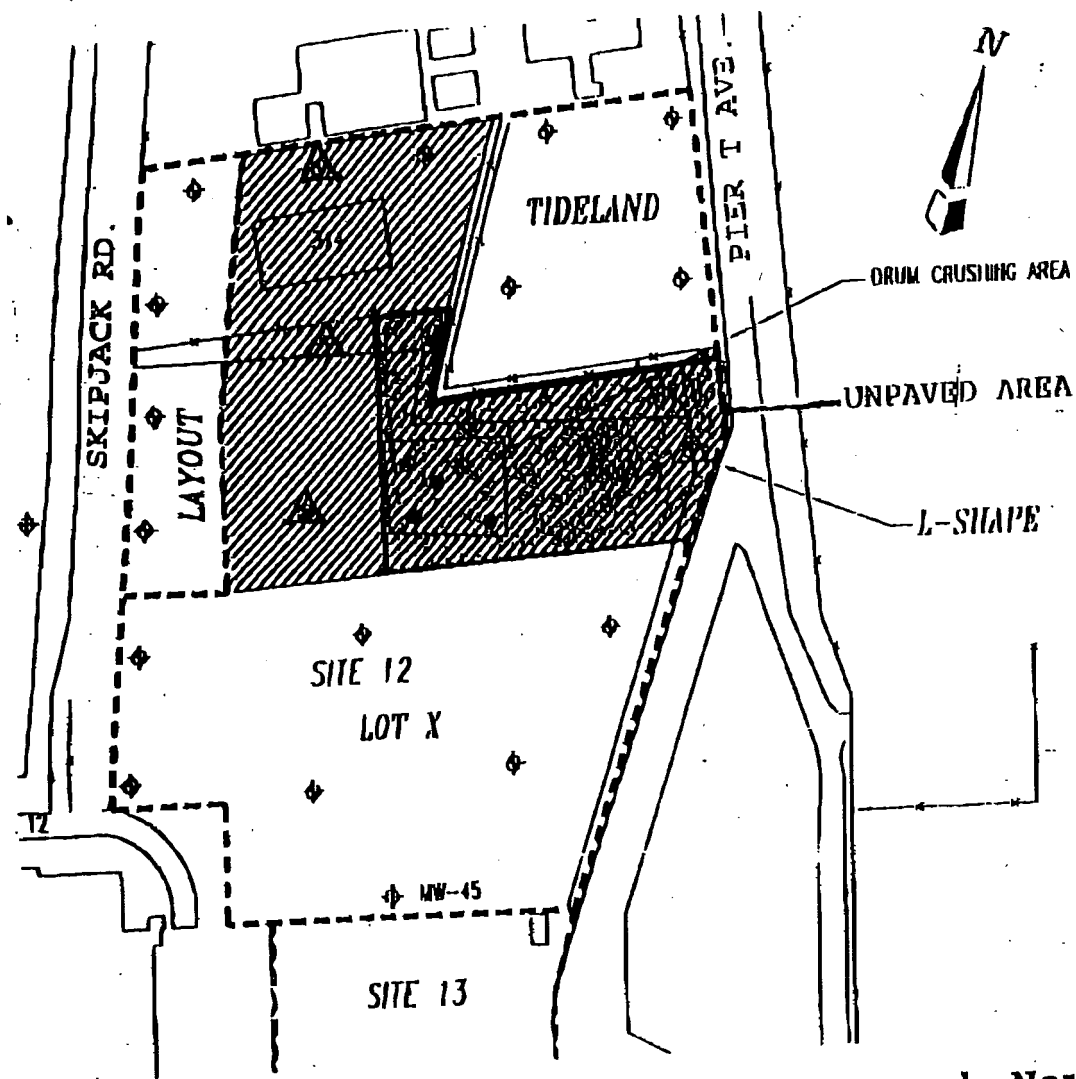
Excavate and properly dispose of contaminated soil, once the extent of contamination is defined. In view of ongoing Remedial Investigation and Feasibility Study (RI/FS) activities at Site 12, this was not considered a viable alternative for an interim removal action, because of the length of time needed to execute, and the prohibitive costs of excavation and disposal of the contaminated soil without the full benefits of the RI/FS.

Alternative 3: Cover unpaved area with asphaltic cement

This alternative will mitigate the migration of contaminants and is economically feasible. Ongoing RI/FS activities will not be impeded.

Because the conditions at this site meet the criteria for a removal action under section 300.415(b)(2) and the NCP, I recommended your approval of the proposed removal action. The total project cost is estimated at \$129,000.

 APPROVED 12/6/94 DATE
CAPT. J. PICKERING, US NAVY




LEGEND:

- ◆ - PROPOSED WELL POINT LOCATION
- ▲ - PROPOSED WELL POINT LOCATION WITH ADDITIONAL SVOC ANALYSIS
- ◇ - EXISTING GROUNDWATER MONITORING WELL
- - PROPOSED SURFACE SOIL SAMPLING LOCATION
- ▨ - APPROXIMATE EXTENT OF DISPOSAL AREA (BASED ON AIR PHOTOS)

Site 12, Long Beach Naval Shipyard

FIGURE 1

DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA 90822-5099

FACSIMILE TRANSMISSION

ENVIRONMENTAL PROTECTION DIVISION

Telephone: (310) 547-7868

DSN: 360-7868

FAX: (310) 437-4840

1916

DATE: 21 Mar 96 (415) 744-2288
(fax number)
TO: MARTIN HAUSLADEN U.S. EPA
(name) (company)
FROM: C. Anna Ulaszewski
(name)

TOTAL NUMBER OF PAGES INCLUDING COVER SHEET: 13

REMARKS:

I DON'T KNOW IF YOU HAVE A COPY OF THE ACTION MEMO FOR SITE 12, SO HERE IT IS.
IF YOU HAVE ANY QUESTIONS, JUST GIVE ME A CALL.
HAVE A FINE WEEKEND.

ANNA
[Signature]



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

January 9, 1995

Ms. Kimberly Kesler
Department of the Navy
Base Realignment and Closure Program Office
Southwest Division, Naval Facilities Engineering Command
1420 Kettner Boulevard, Suite 507
San Diego, California 92101-2404

Subject: Review of the Draft Finding of Suitability to Transfer
(FOST) Naval Hospital Parcel B, Long Beach California

Dear Ms. Kesler:

The Environmental Protection Agency (EPA) has completed it's review of the subject document dated December 9, 1994. The Department of the Navy (DON) is seeking concurrence from EPA that Parcel B is suitable for transfer by deed under Section 120 (h) (3) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The draft FOST is generally well written and follows DoD guidance for preparation of FOSTs; however, we do have some minor comments, included in the Attachment, that should be incorporated into the final FOST. Upon receipt of the final FOST, which includes the revisions and clarifications requested by EPA, we will provide the Navy with a letter of concurrence to satisfy the requirements of CERCLA Section 120 (h) (3).

EPA appreciates the communication and teamwork demonstrated on this project. We would appreciate a written schedule with projected dates for upcoming FOSTs and FOSLs, even if only tentative, to help us plan for future deliverables. If you have any questions or comments regarding these comments, please contact me at (415) 744-2410 or Ms. Deirdre Nurre, Base Closure Specialist at (415) 744-2246.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sheryl Lauth".

Sheryl Lauth
Remedial Project Manager

Attachment

cc: Ms. Deirdre Nurre, EPA
Ms. Carmen Gonzalez, EPA ORC
Mr. Ron Okuda, DTSC
Mr. Alvaro Gutierrez, DTSC
Mr. Hugh Marley, RWQCB
Mr. Alan Lee, Navy

**U.S. ENVIRONMENTAL PROTECTION AGENCY'S COMMENTS ON THE DRAFT
FINDING OF SUITABILITY TO TRANSFER (FOST)
NAVAL HOSPITAL, LONG BEACH, CALIFORNIA, PARCEL B**

Specific Comments:

1. Page 2, Section 4.0. EPA agrees that the Navy's proposed transfer of Parcel B to the City of Long Beach could be categorically excluded from NEPA if the parcel is passively transferred pursuant to the reversion clause in the Navy's grant deed from the City. Under this clause, Parcel B reverts to the City if the federal government ceases hospital-related activities on the parcel. In that instance, the Draft EIR/EIS under preparation for Parcel A should analyze the cumulative impacts of the reuse occurring on Parcel A and Parcel B combined. However, to the extent that the Navy is preparing a quitclaim deed to facilitate the City's sale of the property to a third party developer, and that the development is in some way contingent on the Navy's action, a categorical exclusion may not be applicable.
2. Page 4, Section 5.1. Please clarify that the conditions on the adjacent properties do not affect Parcel B in a manner which would pose a threat to human health and the environment.
3. Page 4, Section 5.2. The text should specify the constraint posed by the continued monitoring. The text should state that the sampling is being conducted for confirmation only and that the only constraint is allowing the Navy continued access to the property until the July sampling has been completed. As stated on Page 7, the construction for the proposed reuse of Parcel B will not begin until October 1995 and the last round of sampling is to be completed by July 1995.
4. Page 5, Section 6.1. The first sentence of this section should be revised to read as follows: "Environmental factors posing constraints other than those related to the storage, release or disposal of hazardous substances and petroleum are evaluated in this section." The reason for this proposed change is that the original language in the draft FOST suggests that asbestos and lead are not CERCLA hazardous substances. Asbestos and lead are CERCLA hazardous substances. However, what distinguishes section 6 of the draft FOST from section 7 is that the hazardous substances discussed in section 6 have not been stored, released or disposed of on Parcel B.

5. Page 6, Section 7.1. The Final CERFA EBS does not provide a discussion of removal and sampling results for the waste oil tank and waste/oil separator. Please add a sentence to this paragraph explaining whether there is evidence of any release or disposal of hazardous substances on Parcel B. For example, the text should include language to clarify that hazardous substances were not detected in the soil samples collected during removal of the waste oil tank and oil/water separator. However, it should be noted, and further discussed within Section 7.2, that petroleum contamination was detected in one of the soil samples collected from the oil/water separator.
6. Page 7, Section 7.2, first paragraph. Please replace the word "hydrocarbon" in the first sentence with the word "petroleum" in order to emphasize that the soil was impacted by the petroleum products discussed in paragraph 7.2 and not by the hazardous substances discussed in paragraph 7.1.

The second sentence of this paragraph is not entirely accurate. The reference to "all environmental cleanup standards for the protection of human health and the environment" suggests that the soil cleanup levels are based on a parcel-specific risk assessment. In fact, the soil cleanup levels are based on RWQCB standards for petroleum products. Please clarify that as petroleum products are not regulated under CERCLA, that the excavation and removal activities were conducted in accordance with State regulations and concurred in by the appropriate State regulatory agencies. The second sentence of this paragraph should be revised to read as follows: "The soil on the subject parcel now meets the cleanup standards set by the RWQCB for petroleum products."

The third sentence of this paragraph should specify which regulatory agencies have concurred with the petroleum cleanup level. Since petroleum is excluded from CERCLA's definition of a hazardous substance, the cleanup of petroleum products has been overseen by the RWQCB (with DTSC concurrence) rather than by EPA.

7. Page 7, second paragraph. Please revise the second sentence of this paragraph to specify that the RWQCB (rather than regulatory agencies in general) agrees with the Navy's conclusion regarding the concentration of petroleum hydrocarbons in the groundwater. This sentence should also specify which substances were present at levels below MCLs (i.e. benzene, toluene, xylene) or, at a minimum, should specify that the substances are the petroleum components and related breakdown constituents. Finally, please delete the words "or action levels" at the end of the second sentence of this paragraph.

8. Page 7, Conclusions. It would be useful to add a section prior to the conclusion setting forth the covenants to be contained in the deed for parcel B. This section should track the language of CERCLA Section 120(h)(3) and should therefore read as follows:

8.0 ADDITIONAL DEED CONTENTS

The deed will contain a covenant warranting that all remedial action necessary to protect human health and the environment with respect to any hazardous substances remaining on the property has been taken before the date of transfer and that any additional remedial action found to be necessary after the date of such transfer shall be conducted by the United States. In addition the deed will contain a clause granting the United States access to the property in any case in which remedial action or corrective action is found to be necessary after the date of such transfer.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3901

April 21, 1995

Mr. Mike Radecki
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Rm 18
San Diego, California 92132-5181

Subject: Draft Final Addendum to RI/FS Work Plan and Risk Assessment Work Plan for Naval Station Long Beach, Long Beach, California

Dear Mr. Radecki:


The Environmental Protection Agency (EPA) has completed its review of the subject document dated March 22, 1995. We appreciate the effort put forth by the Navy and Bechtel to incorporate previous comments provided by EPA. We also appreciate your attempt to facilitate our review by providing a "red-lined" version of the document.

We agree that the majority of EPA's comments have been incorporated into the Work Plan and suggest, given that the data have already been collected, that the Navy continue with the data analysis process without further revision of this document. We would also suggest the Navy continue to present the Agencies with results of the data analysis and interpretation process and would expect that any further clarification on data interpretation can be resolved during this process or as part of our review of Technical Memorandum #6 and/or the Remedial Investigation (RI) Report.

EPA concurs that the sediment sampling and bioassays performed are appropriate and will provide the Navy with useful information to evaluate if site sediments pose a significant risk to benthic organisms, given that testing protocols were followed. As stated in previous project meetings and in our September 15, 1994 Memorandum regarding the fish sampling effort, EPA is still uncertain as to what contribution the fish tissue data will provide in answering questions related to the focused ecological assessment. However, as these data have already been collected, we do believe these data should be included in the evaluation process to support the weight of evidence approach outlined in the Work Plan.

If you have any questions regarding this letter, please call me at (415) 744-2410.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sheryl Lauth".

Sheryl Lauth
Remedial Project Manager

cc: Mr. Alvaro Gutierrez, DTSC
Mr. Hugh Marley, RWQCB
Mr. Alan Lee, Navy



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

May 5, 1995

Ms. Kimberly Kesler
Base Closure Manager
Southwest Division
1420 Kettner Blvd, Ste 507
San Diego, CA 92101-2404

Subject: Finding of Suitability to Lease Naval Station, Long Beach, California, Navy Mole and Transportation Corridor

Dear Ms. Kesler,

Enclosed please find the Environmental Protection Agency's (EPA's) comments regarding the subject document dated May 1, 1995. EPA provided several comments on draft Finding of Suitability to Lease (FOSL) in a letter dated March 3, 1995 and provided verbal comments on the revised FOSL in a conference call on April 26, 1995. We really appreciate the Navy allowing us to review the revised document prior to issuance of this draft final version as EPA and DTSC requested significant changes to the draft document. Overall, the Navy has adequately addressed our comments; however, there are still some minor comments, as outlined below, that should be incorporated into the final FOSL. These comments were agreed to during the April 26, 1995 conference call as outlined in the Memorandum faxed to EPA on April 27, 1995.

Please incorporate the following comments into the final version of the FOSL:

1. The FOSL should include a lease restriction in Section 9.0 prohibiting all non-industrial activities such as swimming and fishing in the waters surrounding the Mole, and
2. There should be a "Y" in the second column in Table 2, indicating a constraint associated with the USTs.

We really appreciate the Navy's effort to coordinate review and comment on this document with EPA and DTSC. If you have any further questions regarding the FOSL, please call me at (415) 744-2410.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sheryl Lauth", is written over the typed name.

Sheryl Lauth
Remedial Project Manager
Federal Facilities Cleanup Office

cc: Ramon Mendoza, EPA
Alan Lee, Navy
Ron Okuda, DTSC

DEPARTMENT OF HEALTH SERVICES

714/744 P STREET

BOX 942732

SACRAMENTO, CA 94224-7320



(916) 322-2308

August 11, 1995

To: Base Commanders
Interested Parties

Subject: Guidance For Radiological Cleanup/Remediation

The California Department of Health Services (Department) has been designated as the agency responsible for administering programs to protect the citizens of California from exposure to radioactive materials (Health and Safety Code §25600 et seq.). As such, it is the Department's responsibility to ensure that military bases (both open and closing) do not pose a threat to the public from exposure to radioactive material. For closing bases, if the potential for radioactive contamination is not addressed during the base realignment and closure cleanup and transfer process, reuse of the base may be restricted by the Department until that potential is adequately addressed. Therefore, we are asking for your cooperation in investigating the potential for radioactive contamination by the most efficient means--concurrently with investigation for other hazardous materials.

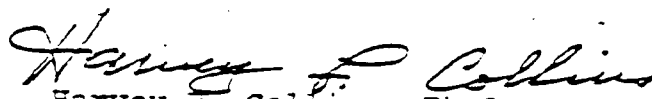
Enclosed with this letter is a list of questions that should be answered about each base to determine the potential for radiological contamination. Use this list as a guide in preparing documents for submittal to the Department. Some bases have already submitted documents which do not include all the necessary information. In those instances, the remaining information should be gathered and provided to the Department as soon as possible. In addition, we encourage you to utilize the radiation expertise that exists within each branch of the military. Several closing bases that are using this expertise are recognizing marked improvements in expediting the process of identifying and remediating radioactive contamination. Contacts for accessing this expertise are provided in Item 13 of the enclosure.

Also enclosed is a flowchart that illustrates the process of investigation, cleanup, and release of parcels with potential radiological contaminations.

Base Commanders
Page 2
August 11, 1995

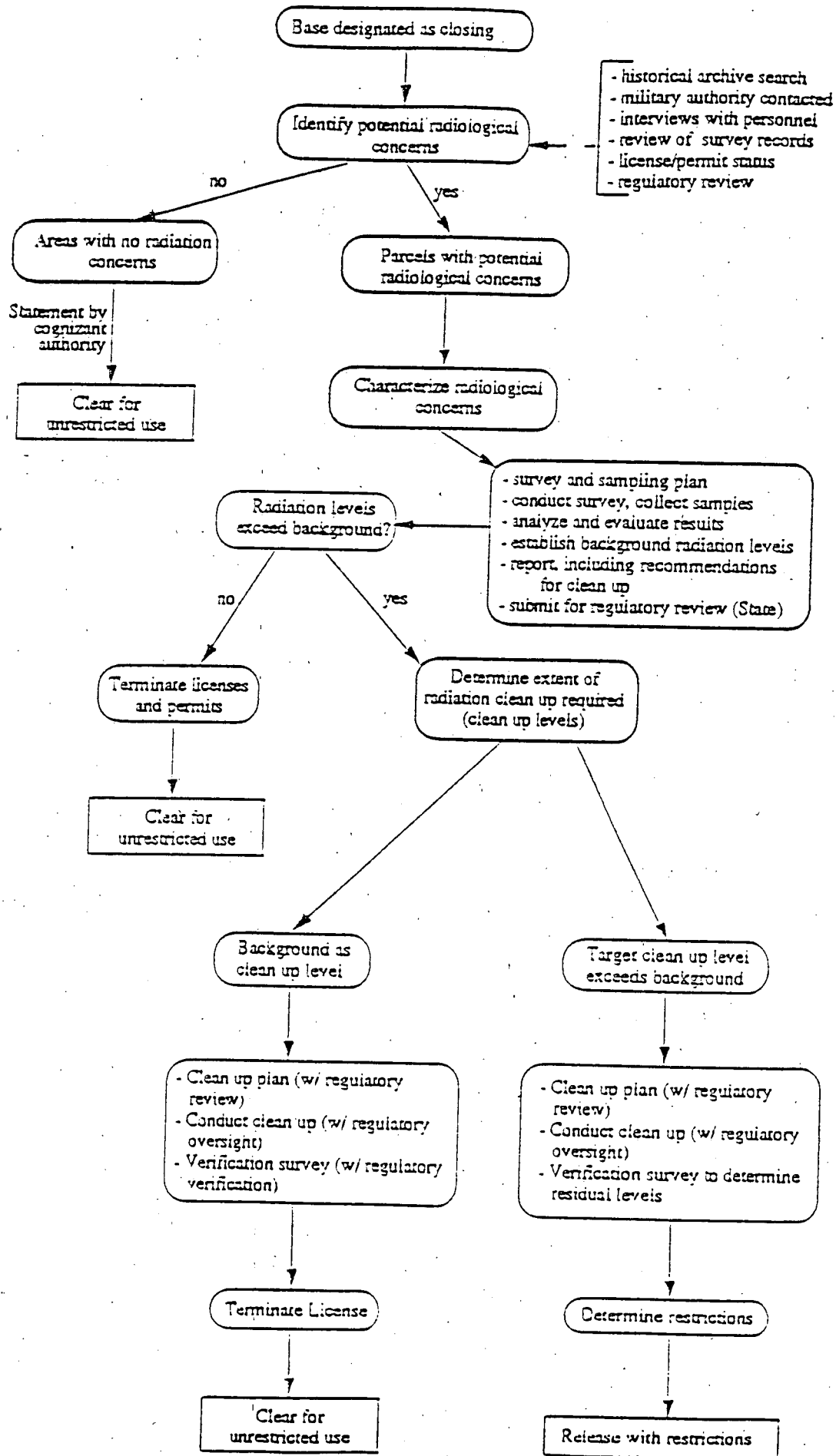
The Department provides radiological support to the California Environmental Protection Agency to address problems at military facilities identified in the Defense State Memorandum of Agreement through an interagency agreement with the Department of Toxic Substances Control (DTSC). The Department's activities at bases must be coordinated through DTSC.

Should you have questions regarding this letter, please contact Rufus Howell of the Environmental Management Branch at (916) 322-2040 or your DTSC contact.


Harvey F. Collins, Ph.D., P.E., Chief
Division of Drinking Water and
Environmental Management

Enclosures

California Department of Health Services
Base Cleanup Process for Environmental Radioactivity



California Department of Health Services
Information Needed for the Radiological Evaluation
of Military Bases.

Information the California Department of Health Services needs for radiological evaluation of military bases:

1. What were the types and quantities of radionuclides used, stored, or disposed of at your facility? The response should include copies of the current license with any amendments, or a summary of those documents. The response should also address uses of nonlicensed radioactive material (*e.g.*, radium-226) and its disposition.
2. How long has your facility been licensed to use radioactive material? How often did your facility utilize radionuclides during a typical work week, and over what period of time were they used?
3. How were radioactive materials used at your facility? What were the protocols and procedures required for their use and what were the details of the protocols and procedures? What was the extent of the past and present radiological surveillance program? Examples of documentation supporting the radiological surveillance program should be provided.
4. How did utilization of radioactive material change over time? When did you begin controlling uses of nonlicensed radioactive material?
5. Discuss and provide data for the ambient radiologic background of your facility within all relevant environmental media. What are the details of your past and present environmental monitoring program?
6. Did your facility release any radioactive material to the environment? What data support your response? If releases did occur, what were the details of such releases, and what was your course of action to correct the problem?
7. Have you buried nonlicensed radioactive material at your facility? What is the supporting documentation for this response?
8. What were the requirements for training users of radioactive material at your facility? What was the chain of command for your radiation safety program? Were personnel monitoring devices used at your facility as part of the radiation safety program?
9. Have any of the individuals in your radiation safety program been interviewed regarding the past and present use of radioactive material? What positions did the interviewees hold in the radiation safety program and for how long?
10. What is your current inventory of sources of radioactive material and their utilization? What remediation is ongoing, or proposed, at your facility?
11. What were and are your plans for the disposition of licensed and unlicensed radioactive sources? What is the potential for mixed waste (radioactive and hazardous wastes) at your facility?

12. In addition to a narrative description of your facility's use of radioactive material, provide a table that identifies each radionuclide, the approximate quantity (in standard units of millicuries or microcuries) per item, as well as the total activity for the inventory of items, the purpose, the years during which the radionuclide was utilized, the location of use, storage, or disposal; whether the source was sealed or unsealed, whether its presence was authorized by a specific license or not licensed; and the disposition of the radionuclide (e.g., decayed on site, disposed of on site, stored on site, transferred off site, destination if transferred).

13. Have you contacted your military service branch's experts in radiologic matters for help in answering questions you have or resolving issues that concern you? Please identify the organization and specific staff contacted. These contacts would include the Air Force's Armstrong Laboratory at Brooks Air Force Base in San Antonio, Texas, telephone (210) 596-3305; the Army's Environmental Hygiene Agency at the Aberdeen Proving Ground, Maryland, (410) 671-3526; the Army Corps of Engineers in Omaha, Nebraska, (402) 221-7401; and the Navy's Radiological Affairs Support Office in Yorktown, Virginia, (804) 387-4695.

April 5, 1994

GUIDANCE FOR CLEANUP OF RADIOACTIVITY ON CLOSING MILITARY BASES FOR UNRESTRICTED PUBLIC USE OF PROPERTY

**Environmental Management Branch
Division of Drinking Water and Environmental Management**

**Radiological Health Branch
Division of Food, Drug and Radiation Safety**

**California Department of Health Services
601 North 7th Street
P.O. Box 942732
Sacramento, CA 94234-7320**

1. INTRODUCTION

- 1.1. This document presents guidance to assist interested parties in the evaluation of levels of environmental radioactivity on closing military bases and resulting radiation exposures to the general population. It provides direction on managing potential risks of cancer from radionuclides in the environment for purposes of site cleanup and decontamination associated with the cleanup of closing military bases so that the property can be utilized by the public. Reducing radiation exposure levels and minimizing cancer risks to the levels set forth in this discussion will be protective against other adverse health effects of radiation (e.g., reproductive and developmental effects) that would be associated with environmental radioactive contamination.
- 1.2. The Department of Health Services (DHS) views it appropriate to maintain consistency with existing health-based standards whenever those standards exist. Hence, DHS believes that its drinking water standards for radionuclides are appropriate cleanup levels for water, as are the radon action level for indoor air, and the federal Environmental Protection Agency's (EPA's) standards for cleanup of residual radium in soil.

2. CLEANUP OF RADIOACTIVE SITES—BASIC PRINCIPLES

- 2.1. Documentation of the history of use, storage and disposal of radioactive material on the site should be complete.
 - 2.1.1. A site characterization document for the site should identify all past and current use, storage and disposal of radioactive material.
 - 2.1.1.1. The site characterization for radioactive material should begin with a review of the general and specific licenses from the US Nuclear Regulatory Commission (US NRC) and Department of Defense (DOD) permits for radioactive material on the site, and reports required pursuant to those licenses and permits.

2.1.1.2. The site characterization should include reviews of written histories and documents, and oral histories or interviews with current and past employees—including current and past base radiation safety officers—and others who would have historical insights into past activities using radioactive material.

2.1.1.3. The various military service branches within DOD have organizations that need to be contacted for consultation about characterization of the site, and for documentation of the historic use, storage, and disposal of radioactive material at the base in question. These include:

- The Air Force's Radioisotope Committee and Armstrong Laboratory at Brooks Air Force Base in Texas.
- The Army's Environmental Hygiene Agency at the Aberdeen Proving Ground, Maryland.
- The Army Corps of Engineers in Omaha, Nebraska.
- The Navy's Radiological Affairs Support Office in Yorktown, Virginia.

2.2. Cleanup of discrete radioactive items.

2.2.1. With the exception of standard commercial smoke detectors installed in buildings, all discrete items that are radioactive and known to be present should be removed. This includes, but is not limited to, (a) radioactive sources, (b) gauges, dials, knobs and other material painted with or containing radium or other radionuclides, (c) radionuclides in electronic equipment and instrumentation, and (d) materials containing depleted uranium. Examples of sources of radioactivity on military bases are presented in Table 2-1.

2.2.2. If radioactive items cannot be removed, unrestricted public use would not be an option for the property in question. The nature of restrictions to be placed on the property, as well as the future use of the site, would require deliberations by concerned parties.

2.3. Cleanup of diffuse radioactive contamination.

2.3.1. Radioactive contamination on the property that is diffuse should be removed to levels that would minimize the cancer risk to the exposed population, consistent with the guidance that follows in this document.

2.3.2. If diffuse radioactive contamination cannot be removed to levels that would minimize the cancer risk to the exposed population, unrestricted public use would not be an option for the property in question.

Table 2-1. Examples of sources of radioactivity on military bases.

The Department of the Army's Corps of Engineers distributed to its regional commands a memorandum (dated December 8, 1993) addressing awareness of radioactive materials used at DOD facilities. That memorandum pointed out that the DOD has issued over 2800 different types of instruments and articles containing radioactive materials, and that radioactive contamination may exist in materials in base supply warehouses, or in shops used for the manufacture, repair or maintenance of such articles. The memorandum also points out that "during the 1940s, 1950s, and 1960s, on-base burial, sometimes in radioactive waste disposal cells and often in on-base landfills, was a reasonable and acceptable disposal technique." That memo plus other information from DOD point out a number of sources of radioactivity that may be found on military bases:

- a. Radium dials, gauges, and illuminators were used extensively in military applications, and represent the most common and the greatest radioactive health and environmental hazard found on bases. Examples include luminous dials on a variety of components used in navigation and communication, and on watch dials, weapons sights, and compasses. To illustrate this point, about half a million deck markers (each with about 20 microcuries of radium-226 or strontium-90) were made for and used by the Navy in 1952. The decommissioning of the Battleships Iowa, Missouri, and New Jersey resulted in the removal of about 1,200 radium-226 components from each vessel. As another example, the equipment utilized for mobile ground control approach (GCA) radar systems contained extensive amounts of radium-226 in readily accessible components such as knobs, dials, and gauges. Some of this GCA equipment had a component that contained up to 5,000 microcuries of radium-226.
 - b. Depleted uranium used in armor and armor piercing ordnance, as well as in shipping containers for use in sealed source radiography.
 - c. Tritium as a source of illumination, especially for exit signs.
 - d. Thorium as a component in lenses to enhance the optical quality, and in magnesium-thorium metal used for machinery, aircraft and rocket parts, plus welding rods used in thick metal welding.
 - e. Hospital and research facilities used tritium and carbon-14 in liquid scintillation counting. Liquid scintillation counting fluids contain xylene or toluene which are hazardous wastes.
 - f. Washdown areas for contaminated equipment (e.g., aircraft and ships) used in association with or in monitoring above-ground nuclear weapons tests.
 - g. Calibration sources for radiation survey instruments.
 - h. Hospital sources used in diagnostic techniques and for radiation therapy procedures, plus sources used in research facilities.
 - i. Sources used in radiography.
 - j. Gauges used to measure the level, thickness, or the density of an object of interest.
 - k. Sources known as commodities which are used extensively as components for weapons systems and within navigation and communication equipment.
 - l. Low-level radioactive waste from reactor and primary plant maintenance and repair, weapon processing, and associated with some of the sources mentioned above.
-

3. CHEMICAL CARCINOGEN EXPOSURES—REGULATORY PERSPECTIVE

- 3.1. Carcinogenic chemical substances that are released into the environment are regulated for the protection of public health to strict standards in non-occupational settings. Regulatory levels are established to limit the cancer risk. Cancer risk is expressed in terms of "excess" cancer cases, that is, those that exceed the cancer cases that would normally occur in a given population (i.e., about 25 to 30%).
 - 3.1.1. The lower end of the range (one excess case of cancer in a population of 1,000,000 people exposed for a 70-year lifetime, the so-called " 10^{-6} " risk) is the usual regulatory goal, though costs and technical feasibility may lead to the higher end of the range (one excess case of cancer in an exposed population of 10,000 people exposed for a 70-year lifetime (the " 10^{-4} " risk)).
 - 3.1.1.1. Human exposures to chemical carcinogens that would result in lifetime cancer risks below the 10^{-6} risk are often referred to as posing a "*de minimis*" risk, and are usually do not receive much regulatory attention, although public health agencies often seek to reduce exposures that result in risks of this magnitude, as well.
 - 3.1.1.2. Human exposures to chemical carcinogens that would result in lifetime cancer risks greater than one excess case of cancer in a population of 100,000 people (the 10^{-5} risk), if allowed by regulatory agencies, could be required to be accompanied by warnings or notices to the exposed population. For example, see California Health and Safety Code §25249.5, *et seq.* or §44300, *et seq.*
 - 3.1.1.3. Risks of 10^{-4} may be allowed by federal and state regulatory agencies if there is an offsetting public health benefit (e.g., the cancer risk from exposure to byproducts of drinking water chlorination), or if the costs of cleanup to a lower risk level are considered excessive, when compared to the benefit.
 - 3.1.1.4. Human exposures to chemical carcinogens that would result in cancer risks to the general population (non-occupational exposures) greater than the 10^{-4} risk level are generally not allowed by federal and state regulatory agencies.
- 3.2. The US EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final* (October 1988), has as a step in the evaluation process, a determination as to "[w]hether the remediation goals for all carcinogens of concern . . . provides protection within the risk range of 10^{-4} to 10^{-7} ." (page 4-15). The lower end of this range is a lifetime cancer risk of one excess case of cancer per 10,000,000 people.

In Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals), Interim (December 1991), the US EPA states that "action is generally warranted at a site when the cumulative carcinogenic risk is greater than 10^{-4} . . .," and that preliminary remediation goals are "not needed for any chemicals in a medium with a cumulative cancer risk of less than 10^{-6} ." When the cancer risk for a medium is "within the range of 10^{-6} to 10^{-4} , a decision about whether or not to take action is a site-specific determination." (page 15).

- 3.3. The DOD's Base Realignment and Closure (BRAC) Cleanup Plan Guidebook (Fall, 1993) identifies "areas of contamination below action levels" for carcinogens (page 4-52) as areas that "risk estimates completed for contamination do not do the following:"

- Exceed 10^{-6} for any carcinogenic hazardous substance or petroleum constituent detected in any medium.
- Exceed 10^{-6} for all carcinogenic hazardous substances and petroleum constituents, taken together, in any exposure pathway.
- Exceed 10^{-4} for all carcinogenic hazardous substances and petroleum constituents accumulated across all pathways.

3.3.1. The DOD BRAC Cleanup Plan Guidebook states: "At present, sites exhibiting a cancer risk of 10^{-4} or greater are considered unacceptable, and require action to protect human health. Sites with cancer risks below 10^{-6} are considered acceptable, and are likely candidates for NFA [no further action]. Sites exhibiting risks between these two values require the exercise of considerable professional judgment on a site-by-site basis. . . . The classification of the carcinogens, and the likelihood of the exposure assumptions and the future land use scenarios should be considered in site-specific interpretations of the risk estimate. The result will facilitate the identification of site-specific solutions and actions that are appropriate for each site to protect human health and the environment. However, consistency across a given installation is desirable and a general consistent installation-wide approach to cost/benefit analysis of remedial alternatives will facilitate application of risk management policies." (page 4-71).

3.3.2. The DOD continues: "Examples [of sites that require special consideration] are sites . . . where a proven human (class A) carcinogen is present, resulting in lower acceptable risk estimates." (page 4-71).

3.3.2.1. The US EPA has designated all radionuclides to be Class A carcinogens, "based on their property of emitting ionizing radiation and on the extensive weight of epidemiological evidence of radiation-induced cancer in humans." (US EPA, *Risk Assessment Guidance for*

Superfund: Volume I—Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals), Interim, December 1991, page 33.)

4. RADIATION EXPOSURES—CANCER RISK AND EXPOSURE LIMITS

4.1. Radiation standards are established or recommended by a number of agencies, including the US EPA, the NRC, the National Academy of Sciences/National Research Council (NAS/NRC), the National Council for Radiation Protection and Measurements (NCRP), the International Council for Radiological Protection (ICRP), and the California Department of Health Services (DHS). These groups utilize a linear dose/effect relationship for the estimate of radiation effects, extrapolating to low exposures from the high exposures that are associated with human radiogenic cancer.

4.1.1. Lifetime cancer risk from radiation exposure is estimated in the NAS/NRC's *Health Effects of Exposure to Low Levels of Ionizing Radiation*, BEIR V (Table 4.4, Page 176, NAS/NRC, 1990) to be 520 and 600 excess cancer deaths per 100,000 for males and females, respectively, for a continuous exposure of 1 milligray per year (100 millirads per year). From these values, an estimated lifetime risk of 6×10^{-5} per mrad/yr results. Hence, 0.016 mrad/yr would yield a lifetime cancer risk of 1×10^{-6} , and 1.6 mrad/yr would yield a lifetime cancer risk of 1×10^{-4} .

4.1.2. The NRC, in its 1990 Below Regulatory Concern Policy Statement, based on reports by the United Nations Scientific Committee on the Effects of Atomic Radiation and ICRP, cited an annual cancer risk of 5×10^{-7} per mrem/yr, or a lifetime (70-yr) risk of 3.5×10^{-5} . From this risk, an exposure of 0.028 mrem/yr would result in a lifetime cancer risk of 1×10^{-6} , and 2.8 mrem/yr would result in a lifetime cancer risk of 1×10^{-4} . The estimates of cancer risk per exposure are helpful for purposes of this guidance. In 1993, NRC abandoned its Below Regulatory Concern Policy Statements.

4.1.3. The NCRP, in *Limitation of Exposure to Ionizing Radiation*, (Table 7.1, Report No. 116, 1993) presents estimates of 5×10^{-2} excess fatal cancers per sievert (100 rem) and 1×10^{-2} excess non-fatal cancers per sievert, based on NCRP and ICRP reports. These can be summed to equal 6×10^{-2} per sievert, or 6×10^{-2} per 100 rem, or, with a linear assumption, 6×10^{-7} per mrem. From this, an annual exposure of 1 mrem each year for 70 yr would result in a lifetime risk of 4.2×10^{-5} excess cases of cancer. From this, an annual exposure of 0.024 mrem would result in a lifetime cancer risk of 1×10^{-6} , and 2.4 mrem would result in a lifetime cancer risk of 1×10^{-4} .

4.2. Based upon the doses and risk estimates presented above, lifetime cancer risks can be approximated for various lifetime annual radiation exposures, as presented in Table 4-1.

4.2.1. The current radiation standard for workers is 5,000 mrem/yr.

- 4.2.2. Current federal and state standards for members of the general public include 100 mrem/yr for members from all radiation sources, 25 mrem/yr from nuclear power operations or radioactive waste, 10 mrem/yr from airborne radionuclide emissions, 4 mrem/yr from radionuclides in drinking water.

Table 4-1. Lifetime (70-year) cancer risks and corresponding annual radiation exposures. For purposes of conversion among risk levels, the exposure/risk relationship is assumed to be linear.

Lifetime cancer risk	Annual radiation exposure (mrem/yr)
10 ⁻²	200
10 ⁻³	20
10 ⁻⁴	2
10 ⁻⁵	0.2
10 ⁻⁶	0.02

- 4.2.2.1. Current standards are for federal operations (*i.e.*, Department of Energy facilities), or for permitted operations that are regulated by federal or state agencies (*i.e.*, US NRC, US EPA, or the California DHS).

- 4.2.2.1.1. As described by the NRC in 1992, its criteria for acceptable levels of radioactive contamination associated with cleanup are inconsistent and not binding on NRC licensees.

- 4.4.2.2. Standards related to the cleanup of radioactive contamination and restoration of sites are under development by the US NRC and the US EPA. The NRC's proposed regulations are to be available in spring of 1994, and EPA's, later in 1994.

- 4.4.2.3. Existing California law (California Health and Safety Code §25249.5, *et seq.*) requires warnings for exposure to radionuclides and may limit discharges of radioactivity to sources of drinking water if lifetime cancer risks exceed 10⁻⁵.

5. BENEFITS OF A COMMON APPROACH TO REGULATING ENVIRONMENTAL CARCINOGENICITY

- 5.1. A uniform, risk-based approach to dealing with radioactive materials and with chemical carcinogens would enable regulators and the public to ensure that environmental cleanup is targeting the exposures that pose the greatest carcinogenic risk.
- 5.2. A uniform approach would enable radioactive materials on closing military bases to be addressed in the same manner as chemical carcinogens (see Section 3.2, above).
 - 5.2.1. Such an approach allows comparisons of sites based on cancer risk, no matter whether concerns are radiation-related, chemical-related, or both.
 - 5.2.2. Such an approach provides a basis prioritization of sites based on cancer risk, for purposes of resource utilization.
 - 5.2.3. Such an approach provides for consistency in dealing with carcinogenic substances, since the focus is on the risk, and not the source of the risk (e.g., radiation vs. chemical).
 - 5.2.4. In determining the overall health risk to the public from environmental exposures, the total cancer risk from radioactive and non-radioactive materials should be considered in the evaluative process.
- 5.3. Currently, the regulation of radiation exposures to minimize cancer risk, when compared with the regulation of exposures to carcinogenic chemical contaminants and expressed in terms of permitted lifetime risk, is generally less restrictive (see Table 5-1).
- 5.4. The establishment of standards to limit radiation exposures to the same cancer risk level used in the regulation of chemical exposures would require that the standards be between 0.02 millirem per year and 2 millirems per year.
 - 5.4.1. These limits would be applied to environmental contamination that results in radioactivity ingested or inhaled by a person and from external irradiation from that contamination (e.g., air, water, and ingested soil, and external exposures from contaminated soil).
 - 5.4.2. Exposures would be in excess of background levels of radioactivity in water, soil, and air, as discussed in below.

Table 5-1. Comparison of lifetime cancer risks and annual radiation exposures, with notes on selected standards.¹

<u>Chemical standard</u>	<u>LIFETIME CANCER RISK or ANNUAL RADIATION EXPOSURE</u>	<u>Radiation standard</u>
	10,000 mrem/yr	
	10 ⁻¹	Workplace limit (5,000 mrem/yr)
Cancer risk at occupational limit—vinyl bromide	1,000 mrem/yr	
Cancer risk at occupational limit—p-toluidine	10 ⁻²	
Cancer risk at occupational limit for several chemicals (acrylamide, amitrole, carbon tetrachloride, chloroform, o-toluidine)	100 mrem/yr	NRC/DOE limit—all sources (100 mrem/yr) EPA action level for radon in indoor air (4 pCi/l)
	10 ⁻³	EPA limit—Nuclear Power Operations (25 mrem/yr) NRC limit—Radioactive Waste (25 mrem/yr)
	10 mrem/yr	EPA limit—Air (10 mrem/yr) EPA limit—Drinking Water (4 mrem/yr)
Upper limit—public (non-occupational) exposures to chemical carcinogens (e.g. trihalomethanes as byproducts of drinking water disinfection)	10 ⁻⁴	
	1 mrem/yr	NCRP Negligible individual dose (1 mrem/yr)
California Proposition 65 standard ² ; Air "Toxic Hot Spots" notification requirement	10 ⁻⁵	
	0.1 mrem/yr	
"De minimis" level for exposures to chemical carcinogens—usually not regulated below this level (e.g., California Recommended Public Health Levels for drinking water)	10 ⁻⁶	
	0.01 mrem/yr	
	10 ⁻⁷	

¹Lifetime cancer risk for radiation exposures is estimated to be 4.2×10^{-5} excess cases of cancer for an annual exposure of 1 mrem each year for 70 years. For chemical carcinogens, cancer risk is estimated by methods utilized by the US EPA and other federal regulatory agencies, and by State of California regulatory agencies. The methods are generally consistent, though for certain chemicals, the specific risk may differ among different federal and state agencies. Radiation standards from US EPA, *Issues Paper on Radiation Site Cleanup Regulations*, EPA 402-R-93-084, September 1993. Cancer risks from occupational exposures are taken from the US Occupational Safety and Health Administration's Final Rule on Air Contaminants 29 CFR Part 1910, Section 15, "Substances for which limits are based on avoidance of cancer," *Federal Register* 54: 2668 (1989).

²Includes radionuclides.

6. BACKGROUND RADIATION CONSIDERATIONS

- 6.1. Radiation from natural sources in the environment results in external and internal radiation exposures to people. This is usually around 300 mrem/yr. Long-lived fission products deposited as world-wide fallout from historic above-ground testing of nuclear weapons also contribute to the global environmental radioactivity burden and to ambient background radiation.
- 6.2. Recommended cleanup levels are exclusive of location-specific ambient background radioactivity. For purposes of this document, "ambient" includes radioactivity from global fallout associated with above-ground nuclear weapons testing, and radioactivity from natural origins within (1) building materials such as bricks and aggregate, and (2) fertilizers.
- 6.3. Resulting cancer risks are those that result from radiation exposures in excess of background exposures.
- 6.4. Cleanup of a particular radionuclide need not be to levels below its background concentration for a given site or medium.
- 6.5. Determination of background radiation levels is an important part of the site characterization process, when embarking on a cleanup of a radionuclide contaminated site.

7. DETERMINATION OF RADIONUCLIDE CONCENTRATION LIMITS AND EXTERNAL RADIATION EXPOSURES

- 7.1. The following default assumptions should be used in determining exposures to radionuclide contaminated soil, water, or air, unless scientifically more appropriate values can be justified:
 - 7.1.1. Drinking water consumption: 2 liters per day.
 - 7.1.2. Air inhalation: 20 cubic meters per day.
 - 7.1.3. Soil ingestion: 0.1 gram per day.
 - 7.1.4. Lifespan: 70 years (25,500 days).
 - 7.1.5. Residence time on soil: 70 years.
- 7.2. In determining radiation exposures, the dosimetric monitoring, documentation and calculations should be clearly shown and references should be appropriately identified. Any method or methods that are utilized in the determination of radiation exposure and dose calculation should follow the hierarchy of methods set forth in Section 8.
- 7.3. Dose calculations and risk should be based on the tissue or organ of concern—that is, the tissue or organ that received the greatest committed dose equivalent per unit of radioactivity intake. Where there is no specific target tissue or organ, the total body should be the tissue or organ of concern, and the total effective dose equivalent should be used.

8. METHODS OF ANALYSIS FOR RADIONUCLIDES IN ENVIRONMENTAL MEDIA AND EXTERNAL RADIATION EXPOSURES

- 8.1. "Method of analysis" or "methods of analysis" refer to the method or methods of detection of radiation exposure or detection and calculation of radiation exposure or of a radionuclide in a particular environmental medium, including but not limited to, water, air, soil, or food.
 - 8.1.1. Included herein are methods and procedures concerning the number of samples and the frequency and site of sampling that are appropriate for the monitoring of radioactivity in environmental media or external radiation exposures.
 - 8.1.2. The calculations of dose, dose equivalence, or other expressions of absorption of deposited energy associated with the interaction of ionizing radiation with biological cells, tissues, organs, etc., are also considered to be within the realm of "method of analysis."
- 8.2. In performing an analysis to determine external radiation exposures of a contaminated site, or background external radiation exposures, generally accepted standards and practice, including, but not limited to, radiation monitoring, location and frequency of sampling, equipment, collection of data, statistical analysis, interpretation of results, modeling and dose calculations should be observed.
- 8.3. In performing an analysis to determine the concentration of a given radionuclide in a given environmental medium, or the background concentration of that radionuclide in that medium, generally accepted standards and practice, including, but not limited to, location and frequency of sampling, sample collection, numbers of samples, sample storage, and preparation, radiochemical analysis, statistical analysis, interpretation of results, modeling and dose calculations should be observed.
- 8.4. Complete written documentation should be maintained for all procedures, including but not limited to, frequency and location of sampling, types of dosimeters and instrumentation used, sample collection, sample handling and chain of custody, storage, and preparation, analyses, and dose calculations.
- 8.5. The following is the hierarchy that is to be utilized in establishing the method or methods of analysis to be used for the evaluation of environmental radioactivity, for purposes of describing radioactive contamination and for establishing background radiation levels.
 - 8.5.1. If the California DHS has adopted or employs a method of analysis for external radiation exposures or for a radionuclide in a specific medium, that method is the appropriate method of analysis. If more than one method of analysis has been adopted or is employed by DHS, each may be used as a method of analysis.

- 8.5.1.1 The DHS's Radiologic Health Branch's Policy Memorandum "Clearance Inspection and Survey", Policy No. IPM-88-2, effective September 15, 1991, identifies the procedure to verify that a facility in which licensed materials were used has been decontaminated to acceptable levels and to assure that the facility will not present a radiation hazard to future occupants.
- 3.5.2. If DHS has not adopted or does not employ a method of analysis, a method of analysis for external radiation exposures or for a radionuclide in a specific medium adopted or employed by another state or local agency (e.g., the Department of Toxic Substances Control, the Air Resources Board, a local air pollution control district, the State Water Resources Control Board or a Regional Water Quality Control Board) is the appropriate method of analysis. If more than one method of analysis has been adopted or is employed by another state or local agency, each may be used as a method of analysis.
- 3.5.3. If no state or local agency has adopted or employs a method of analysis, a method of analysis for external radiation exposures or for a radionuclide in a specific medium adopted or employed by a federal regulatory agency (e.g., the US EPA or the US NRC) is the appropriate method of analysis. If more than one method of analysis has been adopted or is employed by a federal regulatory agency, each may be utilized as a method of analysis.
 - 8.5.3.1. The DOD BRAC Cleanup Guide (page 4-55) directs BRAC Cleanup Teams to review data in accordance with the outline given in section 5 of the US EPA guidance document *Guidance for Data Usability in Risk Assessment*.
 - 8.5.3.2. The document *Residual Radioactive Contamination from Decommissioning, Technical Basis for Translating Contamination Levels to Annual Total Effective Dose Equivalent, Final Report*, by W. E. Kennedy, Jr., and D. L. Strange. NUREG/CR-5512, PNL 7994, Vol. 1, October 1992 (reprinted January 1993), provides generic and site-specific estimates of radiation dose for exposures to residual radioactivity after facilities decommissioning. It was prepared for the NRC's Office of Regulatory Applications.
- 3.5.4. If no regulatory agency has adopted or employs a method of analysis, a method of analysis for external radiation exposures or for a radionuclide in a specific medium that is generally accepted by the scientific community—as evidenced by its publication in compilations by professional and scientific associations or societies, in peer-reviewed technical journals published by such associations or societies, or in technical documents prepared for government regulatory agencies—is the appropriate method of analysis. If more than one method of analysis has been generally accepted by the scientific community, each may be utilized as a method of analysis.

9. USE OF DRINKING WATER STANDARDS AS LIMITS OF RADIATION EXPOSURE

9.1. Whenever a source of drinking water is contaminated with a radionuclide, cleanup of an area should be to a concentration resulting in a cancer risk level lower than 10^{-6} to 10^{-4} , except as noted below.

9.1.1. Whenever a source of drinking water is contaminated with a radionuclide for which a specific drinking water maximum contaminant level (MCL) exists, cleanup need not be more restrictive than the MCL for that radionuclide for purposes of protecting public health.

9.1.1.1. California drinking water MCLs exist for the following radionuclides:

- Hydrogen-3 (The California MCL is 20,000 pCi/l)
- Strontium-90 (8 pCi/l)
- Radium-226 and radium-228, combined (5 pCi/l)
- Natural uranium (20 pCi/l—based on chemical toxicity)

9.1.2. Discharges or releases of radioactivity into sources of drinking water may be subject to other regulation and enforcement and should be limited accordingly.

10. USE OF CURRENT ACTION LEVEL FOR RADON IN INDOOR AIR

10.1 The action level of 4 picocuries of radon per liter of air applies to residential indoor air, consistent with State and federal law.

11. USE OF FEDERAL STANDARDS FOR RADIUM IN SOILS

11.1 The Uranium Mill Tailings Radiation Control Act (UMTRCA) and regulations in 40 CFR 192 provide guidance for the cleanup of Department of Energy uranium mill tailing sites for unrestricted use. They state that a site must achieve a concentration of less than 5 pCi of radium per gram above the typical background level for the top 15 centimeters of soil. At depths greater than 15 cm, however, the maximum concentration of radium can be up to 15 pCi/g.

11.1.1. These standards are appropriate for use in situations involving radium contaminated soils, in the absence of other federal guidance. However, they do not apply to soil contaminated by spills or disposal of radium paint, or to radium-containing dials, knobs and gauges that are present in soil.

11.2 Section 11.1 notwithstanding, the NRC and EPA are developing guidance documents for the cleanup of residual radioactivity for property intended for unrestricted use.

12. HEALTH RISKS FROM URANIUM

- 12.1 In evaluating the human health concerns from uranium exposures, the risks associated with uranium's chemical toxicity (principally to the kidneys) may exceed the risks related to its radioactivity. Hence, each endpoint should be evaluated as cleanup options are being considered.

13. CALCULATIONS OF RADIATION EXPOSURES THAT RESULT FROM SELECTED RADIONUCLIDES IN WATER, AIR AND INGESTED SOIL

- 13.1. Comparison of concentrations of selected radionuclides in water, air and soil with various cancer risk levels (10^{-6} , 10^{-5} , or 10^{-4} lifetime cancer risk).

- 13.1.1. Table 13-1.1 presents various intake levels of selected radionuclides and the corresponding lifetime cancer risk from ingested contaminated water. Intakes from water to yield the various lifetime cancer risks are calculated from US EPA's Health Effects Assessment Summary (January 1992). The risk per pCi from US EPA is converted to pCi ingested for a specific cancer risk, divided by (365 days/yr x 70 yr =) 25,550 days, for a daily intake. This value is divided by 2 liters per day to yield corresponding radionuclide concentrations in ingested water.

Table 13-1.1. Concentrations of specific radionuclides in drinking water that would yield various lifetime cancer risks. The drinking water consumption rate is two liters per day for 70 years.

Radionuclide	Lifetime Cancer Risk:		
	10^{-6} (pCi/l)	10^{-5} (pCi/l)	10^{-4} (pCi/l)
Hydrogen-3	370	3,700	37,000
Carbon-14	22	220	2,200
Cobalt-60	1.3	13	130
Strontium-90	6	60	600
Iodine-131	0.55	5.5	55
Cesium-137	0.7	7	70
Radium-226	0.16	1.6	16
Uranium-238	1.3	13	130
Plutonium-239	0.085	0.85	8.5

13.12. Table 13-1.2 presents various intake levels of selected radionuclides and the corresponding lifetime cancer risk from inhaling contaminated air. Intakes from air to yield the various lifetime cancer risks are calculated from US EPA's Health Effects Assessment Summary (January 1992). The risk per pCi from US EPA is converted to pCi inhaled for a specific cancer risk, divided by (365 days/yr x 70 yr =) 25,550 days, for a daily intake. This value is divided by 20 cubic meters per day to yield corresponding radionuclide concentrations in inhaled air.

Table 13-1.2. Concentrations of specific radionuclides in air that would yield various lifetime cancer risks. The inhalation rate is 20 cubic meters of air per day for 70 years.

Radionuclide	Lifetime Cancer Risk:		
	10 ⁻⁶ (pCi/m ³)	10 ⁻⁵ (pCi/m ³)	10 ⁻⁴ (pCi/m ³)
Hydrogen-3	26	260	2,600
Carbon-14	320	3,200	32,000
Cobalt-60	0.01	0.1	1
Strontium-90	0.04	0.4	4
Iodine-131	0.08	0.8	8
Cesium-137	0.11	1.1	11
Radium-226	0.00065	0.0065	0.065
Uranium-238	0.00008	0.0008	0.008
Plutonium-239	0.00005	0.0005	0.005

13.13. Table 13-1.3 presents various intake levels of selected radionuclides and the corresponding lifetime cancer risk from ingested soil. Intakes from soil to yield the various lifetime cancer risks are calculated from US EPA's Health Effects Assessment Summary (January 1992). The risk per pCi from US EPA is converted to pCi ingested for a specific cancer risk, divided by (365 days/yr x 70 yr =) 25,550 days, for a daily intake. This value is divided by 0.1 gram per day, to yield corresponding radionuclide concentrations in ingested soil.

Table 13-1.3. Concentrations of specific radionuclides in ingested soil that would yield various lifetime cancer risks. The ingestion rate is 0.1 gram of soil ingested per day for 70 years.

Radionuclide	Lifetime Cancer Risk:		
	10 ⁻⁶ (pCi/g of soil)	10 ⁻⁵ (pCi/g of soil)	10 ⁻⁴ (pCi/g of soil)
Hydrogen-3	7,400	74,000	740,000
Carbon-14	430	4,300	43,000
Cobalt-60	26	260	2,600
Strontium-90	120	1,200	12,000
Iodine-131	11	110	1,100
Cesium-137	14	140	1,400
Radium-226	3.2	32	320
Radium-228	3.9	39	390
Uranium-238	25	250	2,500
Plutonium-239	0.17	1.7	17

14. CALCULATIONS OF EXTERNAL RADIATION EXPOSURES RESULTING FROM RADIONUCLIDES IN SOIL

- 14.1. Radionuclides in soil, besides presenting an opportunity for human exposure via the pathway of soil ingestion, can also result in human exposures from external radiation, owing to emissions related to their radiologic decay. Table 14-1 presents various concentrations of selected radionuclides and the corresponding lifetime cancer risk from external exposures (10⁻⁶, 10⁻⁵, or 10⁻⁴ lifetime cancer risk).

Table 14-1. Lifetime cancer risks from external exposures to radionuclides in soil. Lifetime cancer risks from radionuclides in soil are calculated from US EPA's Health Effects Assessment Summary (January 1992). The annual risk per pCi/g from US EPA is converted to lifetime risk by dividing the annual risk by 70 years.

Radionuclide	Lifetime Cancer Risk:		
	10 ⁻⁶ (pCi/g of soil)	10 ⁻⁵ (pCi/g of soil)	10 ⁻⁴ (pCi/g of soil)
Hydrogen-3	--	--	--
Carbon-14	--	--	--
Cobalt-60	0.002	0.02	0.2
Strontium-90	--	--	--
Iodine-131	0.01	0.1	1
Cesium-137*	0.007	0.07	0.7
Radium-226*	0.002	0.02	0.2
Radium-228*	0.005	0.05	0.5
Uranium-238*	0.4	4	40
Plutonium-239	840	8,400	84,000

*includes risks from radioactive decay chain products

15. SUMMARY

- 15.1. For closing military bases, the following should occur:
 - 15.1.1. A complete history of the use, storage, and disposal of radioactive material should be documented. Where information is lacking, the discussion should identify the extent in information gaps.
 - 15.1.2. Known discrete radioactive items should be removed.
 - 15.1.3. Diffuse radioactive contamination should be removed to a level that minimizes the risk of exposure to people.
- 15.2. Cleanup levels can rely upon appropriate existing standards for water, air, and soil.
 - 15.2.1. Cleanup of radioactivity in water need not be more restrictive than drinking water MCLs for radionuclides.
 - 15.2.2. Radon in indoor air need not be considered of concern at concentrations below the federal and state radon action levels of 4 pCi radon per liter of air.
 - 15.2.3. In the absence of federal regulation, cleanup of radium in soil need not be more restrictive than 5 pCi/g for the top 15 cm of soil, consistent with EPA rules for cleanup of uranium mill tailings.
- 15.3. For areas that are intended to have unrestricted use upon release to the public, exposures from radionuclide contamination associated with radionuclides other than those identified in 15.2, should not result in a cancer risk in excess of 10^{-6} to 10^{-4} , and should be consistent with the cancer risks resulting from residual chemical carcinogens.
 - 15.3.1. The corresponding limit on the cancer risk for areas that are intended to be unrestricted upon release to the public corresponds to the annual radiation exposures of from about 0.02 to 2 millirems per year.
 - 15.3.2. The annual radiation exposure of from 0.02 to 2 millirems per year for areas that are intended to be unrestricted upon release to the public is in excess of background radiation exposures.
 - 15.3.3. Pursuant to existing California law, exposures that result in cancer risks greater than 10^{-5} may require the property owner to provide warnings to the public.
- 15.4. The method or methods of analysis for external radiation exposures and for external ambient background radiation exposures should be scientifically appropriate, and consistent with existing regulations or guidelines.

- 15.5. The method or methods of analysis for a radionuclide in a specific medium and for the ambient background concentration of a radionuclide in that medium should be scientifically appropriate, and consistent with existing regulations or guidelines.
- 15.6. For exposures from radionuclide contamination associated with radionuclides other than those identified in 15.2, the following applies: If the 10^{-6} to 10^{-4} cancer risk limit corresponds to a radiation exposure that is below background radiation exposures, cleanup should be to the level of non-detection (*i.e.*, to background levels).
- 15.6.1. If the cancer risk limit corresponds to a radiation exposure that is below background radiation exposures, then an external radiation exposure from radioactive contamination that is greater than background, using appropriate radiation monitoring and statistical methodologies, exceeds the limit. This finding should prompt further cleanup and reevaluation of whether the property is to be released for unrestricted use.
- 15.6.2. If the cancer risk limit corresponds to a concentration of radionuclide contamination in a given medium that is below the background concentration of that radionuclide in that medium, then a concentration of the radionuclide in a medium that is greater than its background concentration in that medium, using the appropriate method of analysis including appropriate statistical methods, exceeds the limit. This finding should prompt further cleanup and reevaluation of whether the property is to be released for unrestricted use.

16. REFERENCES

California Code of Regulations Title 22 Chapter 3. Safe Drinking Water and Toxic Enforcement Act of 1986, §12000 *et seq.* List of substances subject to the Act and implementing regulations.

California Department of Health Services. Radiologic Health Branch, Policy Memorandum "Clearance Inspection and Survey", Policy No. IPM-88-2, effective September 15, 1991.

California Health and Safety Code §25249.5, *et seq.*, the Safe Drinking and Toxic Enforcement Act of 1986 ("Proposition 65").

California Health and Safety Code §44300, *et seq.*, Air Toxics "Hot Spots" Information and Assessment Act of 1987.

Department of the Army, Corps of Engineers, Memorandum to Regional Commands Re: Awareness of Radioactive Materials Used at Department of Defense Facilities, December 8, 1993.

Department of Defense, Base Realignment and Closure (BRAC) Cleanup Plan (BCP) Guidebook, Fall 1993.

National Academy of Sciences/National Research Council. *Health Effects of Exposure to Low Levels of Ionizing Radiation*, BEIR V, NAS/NRC, 1990.

National Council on Radiation Protection and Measurements, *Limitation of Exposure to Ionizing Radiation*, NCRP Report No. 116, NCRP, 1993.

US Environmental Protection Agency, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final*, EPA 540-G-80-804, October 1988.

US Environmental Protection Agency, *Risk Assessment Guidance for Superfund: Volume I—Human Health Evaluation Manual (Part B, Development of Risk-based Preliminary Remediation Goals)*, *Interim*, (December 1991), EPA/540/R-52/003, December 1991.

US Environmental Protection Agency, Health Effects Assessment Summary, Table 4A, Radionuclide Carcinogenicity—Slope Factors (in Units of Picocuries), January 1992.

US Environmental Protection Agency, *Issues Paper on Radiation Site Cleanup Regulations*, EPA 402- -93-084, September 1993.

US Occupational Safety and Health Administration, Final Rule on Air Contaminants, 29 CFR Part 1910, Section 15, "Substances for which limits are based on avoidance of cancer," *Federal Register* 54: 2668, 1989.

US Nuclear Regulatory Commission, Below Regulatory Concern Policy Statement, 1990 (Withdrawn by NRC in 1993).

US Nuclear Regulatory Commission, A Summary of NRC's Interim Radiological Cleanup Criteria and Current Dose Bases, Decommissioning and Regulatory Issues Branch, November, 1992.

US Nuclear Regulatory Commission, *Residual Radioactive Contamination from Decommissioning, Technical Basis for Translating Contamination Levels to Annual Total Effective Dose Equivalent, Final Report*, by W. E. Kennedy, Jr., and D. L. Strange, NUREG/CR-5512, PNL-7994, Vol. 1, October 1992 (reprinted January 1993).



Orange County Office
One Technology Dr., F213
Irvine, CA 92718
(714) 753-0444 Fax (714) 753-0945
Fax (714) 453-1365 (Air Services)

Date: 10/17/95

Please Deliver to:

• Randy Holman - Navy ☒ Chargeable
• Allen Lee - Navy ☒ Project #: CA 26.003.002
• Hugh Marchy - RWQCB - (213) 556-0248
• Sharon L. - DTSC ☒ (310) 590-4922
• Alvaro G. - DTSC ☒ (415) 744-1916
• Sheryl L. - EPA
• Mazhar A. - RWQCB (213) 266-7664
Fax: _____

This Fax Is From:

Brian Jacobs

Number of Pages: 4 Including Cover Sheet

☐ As Requested

☒ For Your Information

☐ For Your Approval

☒ For Your Review

PLEASE CALL IF THE TELECOPY IS UNSATISFACTORY

- Proposed locations of monitoring
wells around Site GB.
- RE: POLA Railcar De-watering
Project.

This facsimile is intended for the use of the individual or entity to which it is addressed. It may contain information that is privileged, confidential or otherwise protected from disclosure under applicable law. If the reader of this transmission is not the intended recipient or the employee or agent responsible for delivering the transmission to the intended recipient, you are hereby notified that any dissemination, distribution, copying or use of this transmission or its contents is strictly prohibited. If you have received this transmission in error, please notify us by telephoning and return the original transmission to us at the above address.

• Groundwater Consultants • Geraghty & Miller Engineers • Hydrocarbon Services • Environmental Restoration • Water Information Center • Air Quality Services

GERAGHTY & MILLER, INC.

17/10 '95 TUE 17:18 [TX/RX NO 8964]





A Heidemij company

October 17, 1995
CA0256.003.002

Southwest Division, Naval Facilities
Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181

Attention: Mr. Alan Lee

Subject: Proposed Location of Monitoring Wells
Los Angeles Export Terminal - Railcar Dumper Pit Dewatering Project
Port of Los Angeles
NPDES Permit No. CA0063541

Dear Mr. Lee:

The purpose of this letter is to notify you of the proposed monitoring well locations in the vicinity of the Navy's Site 6B. This notification is being conducted in accordance with the subject NPDES permit and the Agreement between the United States of America and the City of Los Angeles (Agreement).

The location of proposed monitoring wells, GM-1, GM-2, GM-3, and GM-4, are illustrated on Figure 1. The wells will be constructed of 4-inch diameter PVC casing/screen to an approximate depth of 35 feet below ground surface. It is currently anticipated that the wells will be constructed with 0.010-inch slot screen with Lone Star No. 0/30 filter pack sand. Drilling, well installation, and sampling protocols will be conducted in accordance with industry standards and will be consistent with those protocols implemented by the Navy and its contractors under the Base Closure Plan for the Long Beach Naval Shipyard/Station.

It is our understanding that upon initiation of the dewatering project the following monitoring and contingency plans will be implemented.

1. Weekly water level measurements will be collected from the following wells: GM-1, GM-2, GM-3, GM-4, MW-6B-01 through -07.
2. Water level data will be reported to the Port of Los Angeles and the Navy in accordance with the Agreement on a weekly basis.
3. Baseline water quality sampling will be conducted from monitoring wells GM-1 through GM-4, MW-6B-02, -04, -05, and -06 prior to the initiation of the dewatering project.

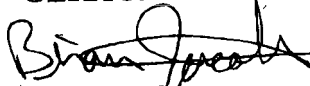


Allen Lee - Naval Facilities
Proposed Well Locations
10/17/95
Page 2

4. Bi-weekly groundwater sampling for chemical analysis will be conducted if a reduction in hydraulic head is observed in the monitoring wells which are attributable to the dewatering activities. Chemical analysis will include total dissolved solids, pH, and volatile organic compounds, as specified in Exhibit H of the subject NPDES permit.
5. Water quality data will be reported to the Port of Los Angeles and the Navy in accordance with the Agreement on a bi-weekly basis.
6. A transient groundwater model will be developed and updated on a biweekly basis to help evaluate and predict the potential for groundwater migration at the Navy's Site 6B.
7. Model update technical memorandums will be submitted to the Port of Los Angeles and the Navy in accordance with the Agreement on a bi-weekly basis.

Field activities associated with installation of GM-1 through GM-4 are tentatively scheduled for Thursday, October 19, 1995. Please do not hesitate to contact Brian Jacobs at (714) 753-0444 regarding any questions or comments you may have concerning the proposed locations of these wells.

Sincerely,
GERAGHTY & MILLER, INC.



Brian Jacobs
Project Manager

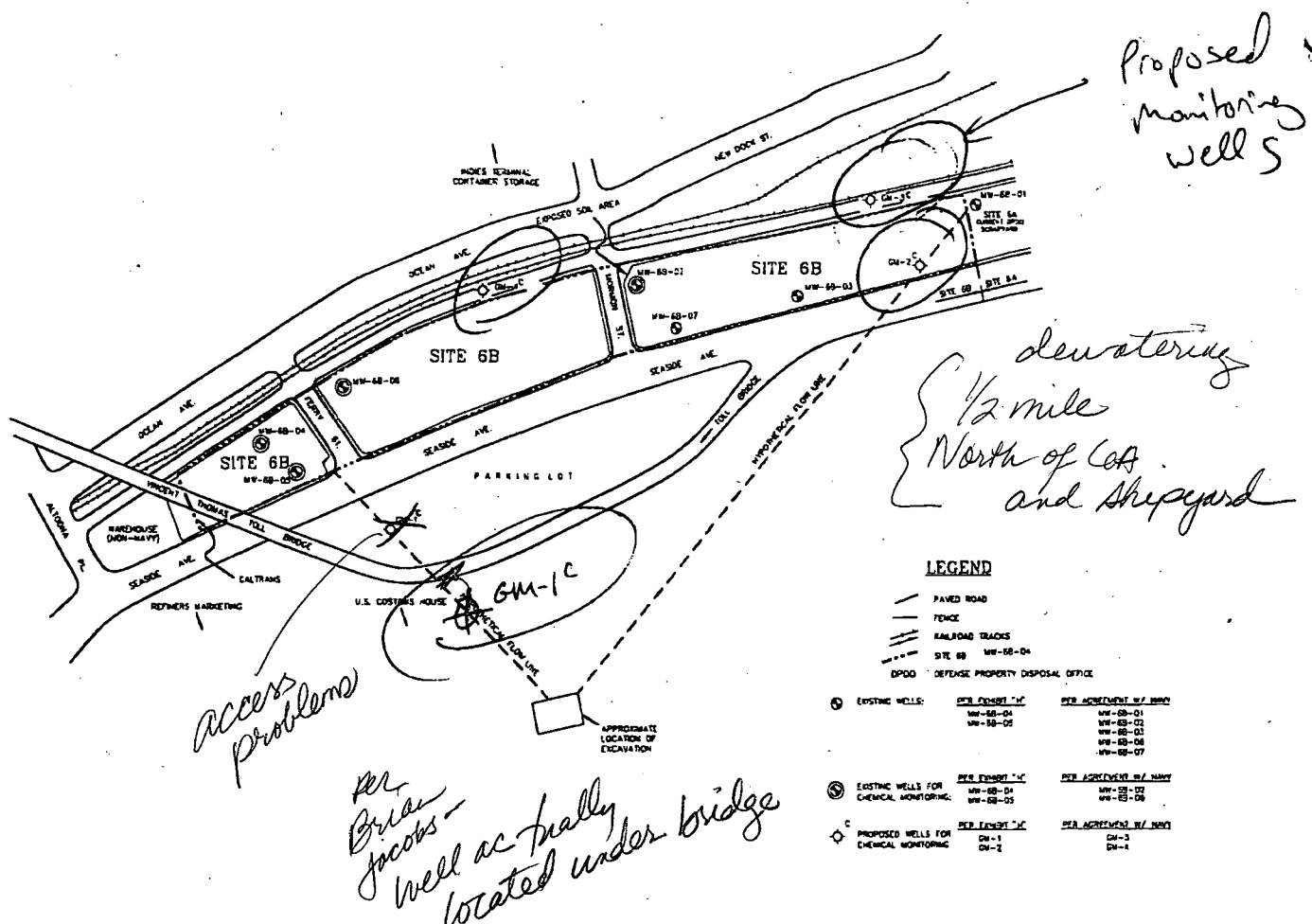
Enclosure: Figure 1

cc: Kishore Ajmera, Geraghty & Miller, West Covina, CA
Craig O'Rourke, Geraghty & Miller, Irvine, CA
Alvaro Gutierrez, Cal-EPA DTSC, Long Beach, CA
Sharon Lemieux, Cal-EPA DTSC, Long Beach, CA
Sheryl Lauth, U.S. EPA Region IX, San Francisco, CA
Randy Holman, Southwest Division, Naval Facilities, San Diego, CA
Betsy Foley, Port of Los Angeles, San Pedro, CA
Hu Marley, Regional Water Quality Control Board, Monterey Park, CA
Mazhar Ali, Regional Water Quality Control Board, Monterey Park, CA

Filename: pla1016.doc

GERAGHTY & MILLER, INC.





SOURCE: PRELIMINARY ASSESSMENT, APRIL 1993
IN ADDITION, PROPOSED LAND EXCHANGE
DRAWINGS BETWEEN NAVY & POLA, 1976
BECHTEL NATIONAL, INC., SI REPORT, 3/16/95



GROUNDWATER MONITORING WELLS FOR RAILCAR DUMPER DEWATERING PROJECT

PORT OF LOS ANGELES

FIGURE
1

legal agreement →
submitted
to PCA board
for approval.

Dewatering
to begin
Nov 15th



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

75 Hawthorne Street
San Francisco, CA 94105

October 30, 1995

Mr. Randy Holman
Southwest Division
1420 Kettner Blvd, Ste 507
San Diego, CA 92101-2404

Subject: Draft Final Amendment to the Finding of Suitability to
Lease for Seaside Avenue and Ocean Boulevard (Site 6A) at the
former Naval Station Long Beach, California

Dear Mr. Holman,

We have reviewed the final document and agree that all of the
Environmental Protection Agency's (EPA's) comments on the FOSL
amendment have been adequately addressed.

If you have any further questions, please call me at (415) 744-
2410.

Sincerely,

A handwritten signature in cursive script, appearing to read "Sheryl Lauth".

Sheryl Lauth
Remedial Project Manager
Federal Facilities Cleanup Office

cc: Alan Lee, Navy
Sharon Lemieux, DTSC

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



September 17, 1996

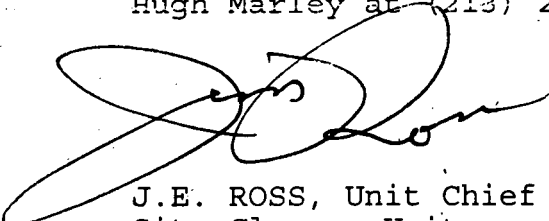
Mr. Gary Simon
Southwest Division
Naval Facilities Engineering Command
Code 1832.SR
1220 Pacific Highway
San Diego, CA 92132-5183

REMOVAL AND DISPOSAL OF UNDERGROUND STORAGE TANKS (USTs) AND OIL-WATER SEPARATORS (OWS) AT LONG BEACH NAVAL SHIPYARD AND REMOVAL AND TREATMENT OF HYDROCARBON CONTAMINATED SOIL AT THE NAVY MOLE, LONG BEACH, CALIFORNIA (File No. 90-76)

We have received and reviewed your workplan for the removal of USTs and an OWS and the removal and treatment of hydrocarbon treated soil at the Long Beach Naval Station and Shipyard, dated September 12, 1996. Our comments are as follows:

- . Note that the soil cleanup levels of 10,000 mg/kg stated in section 1.4 is for TPH as diesel only. The soil cleanup levels for TPH as gasoline is 1,000 mg/kg.
- . The Navy should file a Report of Waste Discharge, Form 200, (enclosed) prior to initiating the thermal desorption and backfilling project.
- . A pilot test or a bench-scale test should be performed to determine if the selected remedy is appropriate.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

Enclosure

cc: Alvaro Guitterez, Department of Toxic Substances Control
CDR Anthony Didomenico, Naval Shipyard Long Beach
Faiq Aljabi, Navy Southwest Division, San Diego
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Ms. Anna Ulaszewski, Naval Shipyard long Beach

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



September 17, 1996

Mr. Gary Simon
Southwest Division
Naval Facilities Engineering Command
Code 1832.SR
1220 Pacific Highway
San Diego, CA 92132-5183

**PROPOSED WORKPLAN - SITE CHARACTERIZATION AND ANALYSIS PENETROMETER
SYSTEM PROJECT - LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA
(File No. 90-76)**

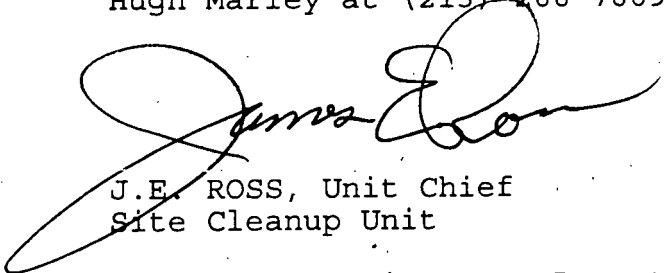
We have received and reviewed the Proposed Workplan for Site Characterization and Analysis Penetrometer System Project at the Long Beach Naval Shipyard, dated September 11, 1996. Our comments are as follows:

- . Note that the soil cleanup levels of 10,000 mg/kg stated in section 1.4 is for TPH as diesel only. The soil cleanup levels for TPH as gasoline is 1,000 mg/kg.
- . Section 2.2.2 should also state that the site is underlain by up to 20 feet of hydraulic fill.
- . Section 2.2.3 should reference the groundwater elevations detailed in the RI document. The depth to groundwater varies significantly from the 8 feet quoted.
- . We are not familiar with the practice of using compressed air to expose the CPT groundwater sampling probe's screen. Of concern is the volatilizing effect of compressed air on a CPT groundwater sampling probe's limited sphere of influence. Please clarify the above.
- . Section 4 is missing the description, and the proposed scope of work for the Building 7 UST site.
- . The workplan indicates that the SCAPS unit will identify and characterize sites with existing and suspected USTs. The SCAPS characterization will then be verified using soil samples. However, when the USTs are then excavated, as planned, more soil samples will be collected, as required by the Fire Department. The workplan should be modified in order to eliminate any redundant soil sampling and analysis.

Mr. Gary Simon
Page 2

The workplan must include, or reference an approved Health and Safety Plan.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Gutterez, Department of Toxic Substances Control
CDR Anthony Didomenico, Naval Shipyard Long Beach
Faig Aljabi, Navy Southwest Division, San Diego
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Ms. Anna Ulaszewski, Naval Shipyard long Beach

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



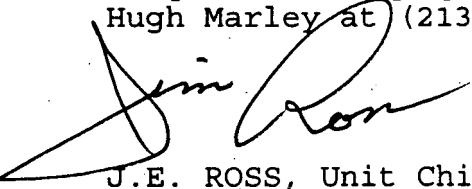
January 26, 1996

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

**DRAFT GROUNDWATER SAMPLING WORKPLAN - NEX GAS STATION - LONG BEACH
NAVAL SHIPYARD, LONG BEACH, CALIFORNIA, (File No. 90-76)**

The Los Angeles Regional Water Quality Control Board has received and reviewed the Draft Groundwater Sampling Workplan for the NEX Gas Station at the Long Beach Naval Shipyard. Please notify Board staff at least 72 hours prior to sampling.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.


J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitierrez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



March 13, 1996

Ms. Anna Ulaszewski
Long Beach Naval Shipyard
Code 1171au
300 Skipjack Road
Long Beach, CA 90822-5000

**CLOSURE REPORT: LONG BEACH NAVAL SHIPYARD UNDERGROUND STORAGE TANK
REMOVAL (File no. 90-75)**

We have received and reviewed the Closure Report for the Long Beach Naval Shipyard Underground Storage Tank (UST) Removal dated March 1995. Our comments are as follows:

Concentrations of TPH as fuel oil (75ppm) and diesel (60ppm) were detected in the groundwater below tank No. 319 (T-4), located west of Building 42. The boring logs indicate that a sheen was observed on groundwater in the boring. We will require that the horizontal and vertical extent of this contamination be delineated.

Concentrations of benzene, toluene, xylene, ethylbenzene and TPH as gasoline, were detected in the capillary fringe below USTs 1 (T-6), 2 (T-7), 3 (T-8), and 4 (T-9), located at the northeast corner of Building 258. Xylene was also detected in water sampled from a hollow-stem auger borehole. We will require that the Navy confirm whether the groundwater at the site has been impacted by the USTs. The horizontal and vertical extent of contamination, if any, should be delineated.

A workplan for the above should be submitted to us for approval prior to commencing work.

If you have any questions or comments regarding these requirements, please contact Hugh Marley at (213) 266-7669.

For Rebecca Chow
J.E. ROSS, Unit Chief
Site Cleanup Unit

Ms. Anna Ulaszewski
Page 2

cc: Alvaro Gutterez, Department of Toxic Substances Control
CDR Kevin Barre, Naval Station Long Beach
✓ Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Duane Rollefson, Southwest Division, San Diego



DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
ENVIRONMENTAL DIVISION
1220 PACIFIC HIGHWAY, RM 18
SAN DIEGO, CALIFORNIA 92132-5181

5090
Ser 1832.DR/479
May 16, 1996

Mr. Hugh Marley
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Dear Mr. Marley:

We have received your letter dated March 13, 1996, regarding the review of the Closure Report for the Long Beach Naval Shipyard Underground Storage Tank (UST) Removal of March 1995. This closure report was prepared by United Pumping Services and was sent to you by the Long Beach Naval Shipyard (LBNSY). Attached is a summary of the USTs listed in the report, all located within the former Naval Station Long Beach. In your letter, you request horizontal and vertical extent of contamination (if any) be delineated at two general locations (UST #319 and USTs #1, 2, 3, & 4). The Navy agrees with your request and will perform an assessment at those two locations. You will be provided with a schedule and work plan in the third quarter of 1996.

In addition, the United Pumping Services report identifies two other "UST like" geophysical anomalies near two of the UST investigation sites (southeast of building 419 and east of building 258). In a separate action, the Navy is going to conduct a UST confirmation, investigation, removal in third quarter 1996 at those two locations.

In regard to the remaining UST sites listed in the attachment, we request your concurrence with report recommendation of no further action and closure of the remaining sites. These locations are USTs #317, 318, 320, 321, 322, and 327.

Any questions regarding this matter may be directed to the undersigned at (619) 532-3455.

Sincerely,

A handwritten signature in black ink, reading "Duane Rollefson", is written over the typed name.

DUANE ROLLEFSON

Remedial Project Manager

By direction of the Commander

5090
Ser 1832.DR/479
May 16, 1996

Encl:

- (1) Location, Capacity, Fuel Type, and History of Tanks per
United Pumping Service report of March 1995

Copy to:

Long Beach Fire Department
Attn: Inspector Thomas Hayes
211 East Ocean Blvd.
Long Beach, CA 90802

Department of Health and Human Services
City of Long Beach
Attn: Hazardous Waste Operations Officer
2525 Grand Ave.
Long Beach, CA 90815

Mr. Alvaro Gutierrez
Department of Toxic Substances Control
Base Closure Branch
245 West Broadway, Suite 425
Long Beach, CA 90802-4444

Mr. Martin Hausladen
U. S. Environmental Protection Agency
75 Hawthorne Street, H-9-2
San Francisco, CA 94105

Mr. Mark Graham
Commander (Code 1171)
Long Beach Naval Shipyard
300 Skipjack Road
Long Beach, CA 90822-5099

TABLE 1-1
LOCATION, CAPACITY, FUEL TYPE, AND HISTORY OF TANKS

Tank No.	Tank Location	Tank Capacity	Date Constructed	Type of Fuel	Remarks from the Last Inspection	Contents
327 (1)	South of Bldg. 398	1000 gallons	Prior to 1950	Fuel Oil	See Notes 1 & 4	1000 gallons sand
317 (2)	East of Navy Lodge B419	1875 gallons	Prior to 1944	Fuel Oil	See Notes 1 & 4	1875 gallons sand
318 (3)	South of Navy. Lodge B419	1875 gallons	Prior to 1944	Fuel Oil	See Notes 2 & 4	See Note 2
319 (4)	West of Bldg. 42	1875 gallons	Prior to 1944	Fuel Oil	See Notes 3 & 4	1875 gallons sand
320 (5)	West of Bldg. 40	1875 gallons	Prior to 1944	Fuel Oil	See Notes 2 & 4	See Note 2
1 (6)	Northeast Corner of NEX B258	10,000 gallons	1950 ±	Gasoline	See Notes 2 & 4	See Note 2
2 (7)	Northeast Corner of NEX B258	10,000 gallons	1950 ±	Gasoline	See Notes 2 & 4	See Note 2
3 (8)	Northeast Corner of NEX B258	6,000 gallons	1950 ±	Gasoline	See Notes 2 & 4	See Note 2
4 (9)	Northeast Corner of NEX B258	6,000 gallons	1950 ±	Gasoline	See Notes 2 & 4	See Note 2
322 (10)	Northwest Corner of Bldg. 299	1875 gallons	Prior to 1944	Fuel Oil	See Notes 1 & 4	1875 gallons sand
321 (11)	North of Bldg. 422	980 gallons	Prior to 1944	Fuel Oil	See Notes 2 & 4	See Note 2

NOTE 1: Location verified by non-destructive subsurface survey; records indicate tank is sand-filled.

NOTE 2: Not located by non-destructive subsurface survey; assumed to have been previously removed.

NOTE 3: An underground object believed to be Tank No. 319 was verified by non-destructive subsurface survey.

NOTE 4: The tank numbering system in the contract plans was different from the one used by the LB Shipyard. The number which was in the contract plans is shown in parenthesis.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



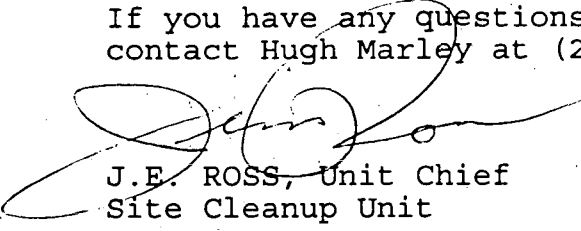
May 24, 1996

Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Environmental Division, Code 1823. FA
1220 Pacific Highway
San Diego, CA 92132-5199

**REQUEST FOR NO FURTHER ACTION FOR UNDERGROUND STORAGE TANKS (USTs)
#317, 318, 320, 321, 322, AND 327. (File no. 90-75)**

We have received and reviewed your request for no further action for USTs #317, 318, 320, 321, 322, and 327, located at the Naval Shipyard Long Beach. Our March 13, 1996 comments on the Closure Report for the Long Beach Naval Shipyard Underground Storage Tank (UST) Removal (including the above referenced USTs) have been appropriately addressed by the Navy. Based on the above, we require no further action for the soil and groundwater related to USTs #317, 318, 320, 321, 322, and 327, at this time.

If you have any questions or comments regarding the above, please contact Hugh Marley at (213) 266-7669.


J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Gutterez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Anna Ulaszewski, Long Beach Naval Shipyard



Roy F. Weston, Inc.
One Concord Centre, Suite 1580
2300 Clayton Road
Concord, California 94520-2148
510-603-7900 • Fax 510-603-7901

7 June 1996

Mr. Martin Hausladen, H-9-4
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

W.O. 04900-006-008
DCN: 4900-06-08-AAAS

Subject: **Comments on Draft Remedial Investigation Report
Long Beach Naval Shipyard**

Dear Martin:

Attached please find our comments on the Draft Remedial Investigation for Long Beach Naval Shipyard. A disk with the comments in WordPerfect 5.1 is enclosed.

We reviewed the background methodology and strongly believe that the value used for background must not exceed the highest value in the data set. As requested, we did not review the risk assessment.

The approximate level of effort associated with this review was 175 hours (technical LOE).

If you have questions, please contact me at (510) 603-7917.

Very truly yours,

ROY F. WESTON, INC.

Karla Brasaemle, R.G.
Site Manager

KB/ed
Enclosure





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

June 13, 1994

Mr. Duane Rollefson
Naval Station Long Beach
Code N46, Building 1, room 268
Long Beach, CA 90822-5000

**FINAL TECHNICAL MEMORANDUM #4, IMPLEMENTATION OF FINAL RI/FS
SAMPLING AND ANALYSIS PLAN FOR NAVAL STATION LONG BEACH, LONG
BEACH, CALIFORNIA**

Dear Mr. Rollefson:

Environmental Protection Agency (EPA) has reviewed the subject document along with the response to comments table provided in the attachment. EPA is satisfied that our comments have been adequately addressed and incorporated into the final document.

Based on discussions held during the June 9, 1994 meeting at Bechtel, we suggest that a workshop be held as soon as the data are available to discuss data interpretation and ensure that all the regulatory agency concerns, as raised in the June meeting, are addressed.

If you have any questions regarding this letter, please contact me at (415) 744-2410.

Sincerely,

A handwritten signature in cursive script, reading "Sheryl Lauth", is written over the typed name.

Sheryl Lauth
Remedial Project Manager

cc: Mr. Alvaro Gutierrez, DTSC
Mr. Alan Lee, Southwest Division
Ms. Denise Klimas, NOAA
Ms. Carol Roberts, U.S. Fish and Wildlife



Roy F. Weston, Inc.
Suite 5700
700 5th Avenue
Seattle, Washington 98104-5057
206-521-7600 • Fax 206-521-7601

21 June 1996

Martin Hausladen, H-9-4
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

WO 4900-06-08-2000
DCN 4900-06-08-AAAT

Subject: Independent Validation of Operable Unit 7, Long Beach Naval Station Data

Dear Mr. Hausladen:

Enclosed are data validation memoranda and qualified data summary forms from Roy F. Weston, Inc.'s (WESTON®) review of laboratory data from Operable Unit 7, Long Beach Naval Station.

Data, for the most part, are acceptable for use. However, serious deficiencies were found in the review of organotin data. Significant contamination was present in laboratory method blanks. The Navy's contractor had qualified most organotin results as undetected when concentrations were less than five times associated blank concentrations as specified in data validation guidance. However, since the laboratory had on-going contamination problems which were not corrected, WESTON believes it is more appropriate to reject the data rather than assume analytes are not present in samples. In addition, the laboratory routinely exceeded sample holding times for organotin analysis. The laboratory also reported low recoveries for laboratory control samples, matrix spike analysis, and surrogate compound analysis. These factors taken together suggest that all organotin results exhibit a low bias and that organotin compounds may not have been detected even if present at high concentrations.

A digital copy of the Excel 5.0 spreadsheet received from the Navy's contractor is also enclosed. An additional column containing data qualifiers applied during WESTON's validation has been added to the original Navy data.

Two additional worksheets have been added to the spreadsheet. The first, titled "Missing Data," is a list of analytes (with WESTON qualifiers) which are not included in the Navy's original data even though other analytes from the same samples are present. Results for these analytes may have been rejected by the Navy's contractor during their validation.

The second added worksheet is comprised of samples which were present in laboratory data packages but were not listed on the original spreadsheets.





Please call me at (206) 521-7668 if you have questions.

Sincerely,

ROY F. WESTON, INC.

A handwritten signature in cursive script that reads "Roger McGinnis".

Roger McGinnis, Ph.D.
Senior Environmental Chemist

cc: Lisa Hanusiak, QA Branch
K. Brasaemle, Project Manager
Project file
Chron file



Cal/EPA

Department of
Toxic Substances
Control

245 West Broadway,
Suite 425
Long Beach, CA
90802-4444

Mr. Kurt Baer
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Room 18
San Diego, California 92132-5181

July 8, 1996



Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

**DRAFT REMEDIAL INVESTIGATION (RI) REPORT LONG BEACH
NAVAL SHIPYARD (LBNSY), LONG BEACH, CALIFORNIA**

Dear Mr. Baer:

The California Environmental Protection Agency (Cal/EPA) has completed its review of the *Draft Remedial Investigation Report Long Beach Naval Shipyard, Long Beach, California (Draft RI Report)*, dated April 1996. The Draft RI was prepared by Bechtel National, Inc.

The *Draft RI Report* contains the findings of all site investigations for Long Beach Naval Shipyard, Sites 8 through 13. Risks and hazards are properly quantified, according to the approved workplan. Since, LBNSY has been slated for closure, it is necessary for the Navy to assess exposures with the assumption that current buildings will be removed. Cal/EPA does not agree with the Navy's conclusion that the risk assessment supports no remediation for soils at (LBNSY), because future land users can be exposed by pathways which are not considered in this version of the document. The Navy should submit a modified plan to the regulatory agencies so that all parties can agree on how to make the final version of the risk assessment complete for its purpose. This final risk assessment should include inorganic Chemicals of Potential Concern (COPC) removed due to comparison to apparently contaminated background samples. Also, data inappropriately excluded because of elevated detection limits should be included in the final calculations of exposure point concentrations.



Mr. Kurt Baer

July 8, 1996

Page 2

The Department of Toxic Substances Control (DTSC) has compiled comments on this document from its internal technical staff and from the Regional Water Quality Control Board - Los Angeles (RWQCB) which are enclosed with this letter. If you have any questions, please contact me at (310) 590-5565.

Sincerely,



Alvaro Gutierrez
Base Closure Team Member
Region 4 Base Closure Unit
Office of Military Facilities

Enclosure

cc: Mr. Albert Arellano Jr., P.E. (R4-4)
Unit Chief
Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Ms. Sharon Lemieux (R4-4)
Region 4 Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Kurt Baer

July 8, 1996

Page 3

Ms. Jennifer Rich (R4-4)
Public Participation Specialist
Region 4 Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. J. E. Ross
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Mr. Alan Lee
Base Environmental Coordinator
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181

Mr. Martin Hausladen
Remedial Project Manager
Hazardous Waste Management Division (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

GENERAL COMMENTS

The document is quite thorough and well written. The risk assessment is properly prepared, according to the approved workplan. However, Long Beach Naval Shipyard (LBNSY) is under closure and scheduled for future redevelopment. This necessitates assessing exposure settings not included in the original workplan. Therefore, DTSC cannot agree with the Navy's conclusion that soils at LBNSY do not present significant risks. Before responding to the specific comments below, DTSC recommends that the Navy submit a modified plan to the regulatory agencies, so all parties can agree on how best to finalize the document

SPECIFIC COMMENTS

1. **Figure 2-10, 200-Foot Sand / Gaspar, Groundwater Elevation Contour Map (Spring 1995):** Figure 2-10 contains an error in the Legend description of the contour line. The contour lines described as representing chloride concentrations should be described as representing iso-elevations of the potentiometric levels in the Gaspar 200-foot sand.

DTSC recommends that the Legend be revised to properly describe the features being represented by the contour lines.

2. **Page 2-12, Section 2.1.5.3, Factors Affecting the Groundwater Flow Regime, Drydock No. 1 HPRS:** As commented on the draft RI Report for the Long Beach Naval Station, the discussion of the Drydock 1 dewatering wells does not include any explanation why relief drains connecting the shallow water bearing zone to the Gaspar aquifer are not causing drawdown of water levels near the relief drains even when pumping at long-term rates in excess of 2000 gallons per minute. The design of the hydrostatic pressure relief system (HPRS) was meant to cause drawdown in the shallow water bearing zone. The Gaspar water bearing zone may have a much higher hydraulic conductivity than the sand drains, or the sand drains may have become clogged by acting as filters for suspended solids or by providing habitat for colonizing bacteria.

The Navy's response to comments on the Draft RI for Long Beach Naval Station Sites 1-6A, stated that the impact on local ground water flow direction and rates would be addressed in the Long Beach Naval Shipyard RI Report. The impacts of pumping the HPRS are apparently too small to be measured. The Navy acknowledges that the HPRS has little, if any, impact on ground water levels in the shallow zone and the upper Gaspar

formation, but provides no assurance that if the HPRS is rehabilitated, and causes changes in ground water flow directions, they would re-evaluate the ground water flow regime. The design and efficient operation of potential remediation measures may be impacted by a properly operating HPRS.

DTSC recommends that the Navy provide plans and schedules for HPRS rehabilitation, and assurances that ground water flow in the shallow water bearing zone be monitored and re-assessed if remedial measures could be impacted by a change in the ground water flow caused by changes in the performance of the HPRS.

3. **Section 5.5, IR Site 12 and Section 5.6, IR Site 13:** The discussion of the distribution of poly-nuclear aromatic hydrocarbons (PAHs) and semi-volatile organic compounds (SVOCs) in soil is complete, but would be unclear to a reader not familiar with the data. A contour map of iso-concentrations of PAHs, SVOCs, or a total of both provides a clear picture of the distribution, the separate areas of contamination, and the buildings that obstruct further contaminant delineation. DTSC found that a contour map of the total concentration of PAHs and SVOCs minus the overlapping compounds, provided an adequately clear picture when using iso-concentration contour intervals of 10, 100, 1000, 10,000, and 100,000 micrograms per kilogram.

DTSC recommends that the Navy provide iso-concentration contour maps of PAHs and SVOCs in soils for the combined Site 12 and Site 13 area.

4. **Section 5.7.2.1, Contaminant Fate and Transport, IR Site 8, Conceptual Model:** The conceptual model for fate and transport for Site 8 and the other Shipyard sites uses the method of assessing the risk of individual contaminant calculated concentrations reaching the Southern California Edison (SCE) pumping plant from each source. The current ground water chemistry at the pumping plant is not provided. The additional load from the many other sites not on Shipyard property are not addressed. The additional total load from the Shipyard is not addressed. One of the precepts of environmental impact investigation and assessment is that the aggregate load is an important consideration. That is, does the total Long Beach Naval Complex additional projected organic and inorganic load, as well as can now be determined, reaching the SCE pumping plant, exceed or cause to exceed a significant risk level?

If necessary, the individual site load information can be used to determine which site(s) would provide the best reductions in chemical load if

remediated.

DTSC recommends that the Navy determine the total contaminant load reaching the SCE pumping plant caused by the Long Beach Naval Complex, whether that load presents a significant risk, and whether by adding to existing or projected ground water chemical load the total Long Beach Naval Complex load causes the SCE pumping plant chemical load to exceed a significant risk level.

5. **Units for Soil Gas:** The units are not given for the entries in the bodies of Tables 5.2-6 and 5.2-7. Without knowing these units, DTSC cannot evaluate the Navy's argument elsewhere that indoor air samples are less than health-based values. The same thing seems to occur for most of the tables with results of soil gas. Please show units clearly for each table.
6. **Populations at Risk, Sec. 6.3.1, pp. 6-6 ff.:** In the approved risk assessment workplan, the Navy assumed that current buildings would remain in place and two potentially exposed populations were identified, current shipyard workers and utility workers involved in short-term trenching or construction. At the time that workplan was written and approved, LBNSY was an open military facility; however, LBNSY is now a closing military facility and the property will be leased or transferred to a future reuse entity. Thus, it is no longer appropriate to assume that current Navy buildings will remain undisturbed. Closure of the facility makes it necessary for the Navy to assess potential exposures of future workers to via the pathways customarily used for the industrial setting. This includes exposure to surface and subsurface soils, assuming the absence of pavement.
7. **Toxicity Criterion for Manganese, Sec. 6.4.1.3, p. 6-13:** The Navy is apparently basing its selection of a reference dose for manganese on certain language entered into the IRIS data base in late 1995. The current IRIS file on manganese seems to offer three different values for the oral reference dose to be used under defined conditions. It is DTSC understanding that USEPA regional toxicologists have decided to continue using the former reference dose for manganese, 5×10^{-03} mg/kg-day. DTSC recommends the Navy also use this value. For additional information or guidance on this subject, please contact Dr. Sophia Serda of USEPA Region IX at (415) 744-2307.
8. **Dermal Absorption, Section 6.4.1.5, p. 6-14:** DTSC agrees with the Navy that oral toxicity criteria should not be corrected for absorption for

use in estimating dermal risk or hazard. However, DTSC recommends that the Navy use the values for dermal absorption of certain chemicals and classes published in *Preliminary Endangerment Assessment Guidance Manual* (DTSC, 1994).

9. **Statistical Determination of Ambient Concentrations of Metals in Soils, Sec. 3, Appendix E:** DTSC does not accept some of the background threshold values for metals in soils shown in Table 3-1. This affects the selection of metals of concern across the entire site. Keeping in mind that much metal working occurred at LBNSY throughout its operation, it would not be surprising to find metals in soils at concentrations higher than some defined "local background". When statistical descriptions present evidence of populations of seemingly elevated values of metals probably released at the site, such elevated values can not be included in the description of ambient conditions

According to Figure 3-1 (Is this the missing Figure E-1?), if data sets fail tests for normality and lognormality, outliers should be identified and removed, then distributions will be retested. The presence of outliers due to contamination may be inferred when detected concentrations range over several orders of magnitude and/or when inflection points are obvious in the plot of cumulative frequency vs. concentration or the logarithm of concentrations. Such outliers should be removed prior to estimating the threshold value for "background".

Following this reasoning, DTSC thought values shown in Table 3-1 were surprisingly high for antimony, arsenic, cobalt, copper, lead, manganese, and zinc, especially when compared to similar values shown in Table H1-1 in the RI report for LBNS. Geochemical evidence from Appendix G leads us to accept the Navy's proposed values for arsenic and cobalt, but too few outliers were removed for the other metals, as discussed below.

Antimony: Figure E-6 shows several inflections. The inflection at a concentration corresponding to about e^2 (~7.4 mg/kg) might represent the upper range of the population nearest the origin. The value selected in Table H1-1 for LBNS was 7.39. Is the horizontal portion near 50% frequency a series of non-detects? If so, it might be useful to plot detected values only to identify an inflection with better certainty. In any case, it is not clear that all the outliers have been removed.

Copper: The concentrations of copper used to derive the threshold value range through nearly five orders of magnitude, which is far too wide.

Figure E-19 suggests two populations, the lower of which has a maximum near e^4 (~55 mg/kg). This lower population is almost certainly lognormally distributed, so a parametric estimate of a threshold value is possible. Discussion in Appendix F suggests that a population with elevated values of copper might be expected due to formation of complexes with organic carbon, but no data are presented to indicate that such complexes are present at LBNSY. Even if this were the case, the origin of the carbon could have been a release by the Navy. Sandblasting materials used at LBNSY contained copper, so releases could have occurred. Please recalculate the threshold value based on the lower of the two populations.

Lead: Data on lead are similar to copper. Figure E-23 suggests three lognormally distributed populations. The lower of these have maxima near e^2 (~7.4 mg/kg) and e^4 (~55 mg/kg). Even if complexes of lead with organic material are present, which has not been demonstrated, why are three populations evident if not for contamination? Releases of lead due to shipyard operations are probable. Please recalculate the threshold value using no more than the lower two of these populations.

Manganese: Figure E-25 suggests a lognormally distributed population with a maximum near e^4 (~400 mg/kg). Please recalculate the threshold value using only data from this lower population.

Zinc: The data for zinc (Figure E-39) are quite similar to those for copper. Values below e^4 (~55 mg/kg), apparently represent one lognormally distributed population from which a threshold value should be calculated.

10. **Geochemical Determination of Ambient Concentrations of Metals, Sec. 3, Appendix F:** The geochemical analysis presented in Appendix F is an excellent adjunct to the statistical procedures in Section 3 and Appendix E that DTSC has seen in earlier reports for defining ambient concentrations of metals in soils at Long Beach Naval Station (LBNS). When the two methods yield different results, DTSC technical support staff determines whether the Navy is correct to favor the geochemically defined upper limit of ambient concentrations, because it is underlain by physical and chemical mechanisms, whereas the statistical method is purely descriptive.

For metals in groundwater, DTSC defers this issue to the Los Angeles Regional Water Quality Board for the acceptability of the values shown in Table 3-2. The values in this table were apparently derived properly, according to the procedures described in the text of Section 3.

11. **Excluded Data, Appendix G:** The reason for exclusion of every datum listed in Tables G-1 through G-5 is that the chemical was not detected in the sample and one-half of the sample quantitation limit (SQL) is "significantly" greater than the highest detected concentration (C_{\max}) for that chemical. From the content of the table, "significant" apparently is taken to mean $3 \times C_{\max}$. DTSC rejects these exclusions for the two reasons given below. Please include all these data in the calculations of exposure point concentrations.

First, Section 5.3.2 of *Risk Assessment Guidance for Superfund Human Health Evaluation Manual Part A* (USEPA, 1989) permits exclusion of non-detects from samples with unusually high SQLs, if inclusion of such data would drive the calculation of the exposure point concentration higher than C_{\max} . However, DTSC guidance permits the Navy to select as the exposure point concentration the lower of C_{\max} or the 95% upper confidence limit on the mean value (Chap. 2, Sec. 3.3.1, *Supplemental Guidance for Human Health Multimedia Risk Assessments for Hazardous Waste Sites and Permitted Facilities*, DTSC, 1992). Thus, inclusion of all the values in Appendix G cannot affect the selection of the exposure point concentration

Second, most of the values to be excluded are non-detects for polycyclic aromatic hydrocarbons (PAH) at Sites 12 and 13. Several PAH were detected at Sites 12 and 13 (Tables 5.5-8 and 5.6-6) and are thus chemicals of potential Concern (COPC) at these sites. Thus, it is not reasonable to assume that chemicals detected in one area of a site are not present in other samples which were collected nearby but which were found to have elevated detection limits.

Memorandum

To : Alvaro Guitierrez
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444

Date: June 21, 1996

File : 90-75

From : CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—LOS ANGELES REGION
101 Centre Plaza Drive, Monterey Park, CA 91754-2156
Telephone: (213) 266-7500

Subject: DRAFT REMEDIAL INVESTIGATION (RI) REPORT - LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (File No. 90-75)

We have received the Draft Remedial Investigation (RI) Report for the Long Beach Naval Shipyard, dated April 1996. Our comments are as follows:

General Comments

- . Include plume maps for COC's above screening criteria in both soil and groundwater wherever feasible. This may facilitate source identification.
- . Delete "All Analytes Non Detect" boxes from figures (about 14 on Figure 5-69) in order to reduce clutter.
- . Include the local groundwater flow direction on all figures displaying groundwater information. Flow direction and gradient should be as "site specific" as possible. Include "determine vertical gradients" in the recommended future actions for Sites 9, 10, 11, 12, and 13.
- . Indicate whether the groundwater monitoring wells were gauged and surveyed simultaneously. This is of particular interest in the areas of recent subsidence.
- . We do not object to the groundwater screening criteria listed in bullet 6 on page 3-1. However, we believe that they have been applied inappropriately at Sites 8 through 13. All groundwater contamination exceeding the screening criteria selected must be delineated and remediated as appropriate. We do not concur with the Navy's approach of using the Southern California Edison Long Beach Generating Station's dewatering discharge as the "point of compliance" for all the Naval Shipyards groundwater contamination. Table 8-3, Recommended Future Actions For Groundwater, should be reevaluated based on this comment.

Site 9

- . We understand that a chrome plating shop existed in building 129. Locate storage and dip tanks, associated

with the plating operations, on Figures 5-19 and 5-20. Indicate if all chemicals associated with chrome plating operations were sampled in the footprint of the plating shop area.

A minimum of four storage tanks, in concrete sump-like structures, on either side of the Building 129 North exit, were removed in the 1970's (D. Rollefson, pers. com., 1996). Indicate whether the above tanks/sumps were possibly part of the trench/sump system described on page 5-19. Locate the above on Figures 5-19, and 5-20, and indicate whether the area was sampled. Also, we believe that the sump discovered on the southeast corner of Building 129 should be sampled.

Site 10

The groundwater elevations for SP-10-04, MW-28, SP-10-02, and MW-10-02 on Figure 5-34 show a groundwater gradient sloping towards Drydock 1. This may be a reflection of the Drydocks influence on the shallow groundwater. Please discuss.

The RI describes, on page 5-57, scrap stored in bins on the eastern side of the site. The sampling in the northeast corner shows metal and SVOC contamination. However, the remainder of the eastern portion of the site was not sampled. Based on the results from the northeastern corner, we believe that further sampling along the eastern edge of the site is appropriate.

The geophysical anomaly in the southwest portion of site 10 presents a significant data gap and should be addressed (see General bullet 3 and Site 10 bullet 1).

Site 11

Include a figure displaying pertinent groundwater information.

Note that Figure 5-46 shows the groundwater elevation at this site dropping from -5 ft below Parking Lot F to -10 ft adjacent to Drydock 1. This appears to reinforce the observation that the Drydock has a localized impact on the shallow water table. Please discuss.

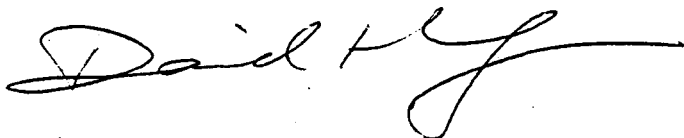
Lysimeters were installed, under our direction, on the exposed portions of Site 11 in order to monitor the impact of rainfall and irrigation on the grit-impacted hillside. Figure 5.4-7 indicates that arsenic, copper, lead, molybdenum, and zinc are leaching out of the hillside soils at levels that are several magnitudes over the Water Quality Objectives for the Protection Of Marine

Aquatic Life. TCLP and STLC testing of the sandblast grit produce similar results (Figure 5.4-2). We believe that, based on the results of the Draft RI, soil samples should be analyzed using EPA Method 1312 (Synthetic Precipitate Leaching Procedure). Please address.

Site 12

- . Include groundwater flow directions in Figures 5-68 and 5-69.
- . The discussion of contaminants in soil on page 1-121 indicates that soil samples containing black sand or sandblast grit with a petroleum odor showed significant PAH and metals contamination. However, a three foot layer of similar material discovered in boring SP-12-05, was only sampled for organotins. We believe that this data gap should be addressed.
- . Based on the TCLP, STLC, and lysimeter data from sandblast-grit impacted areas of Site 11, we believe that the leachability of metals at this site should be addressed.
- . Indicate whether the liquid filling the N-S oriented low area described on page 5-108 could be an oil spill or an oil sump related to the oil production. Also, clarify whether the black oily material discovered in HP-12-32 may be a part of the above mentioned spill or sump.

If you have any questions regarding the above, please contact Hugh Marley at (213) 266-7669.



for J.E. ROSS, Unit Chief
Site Cleanup Unit

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



July 19, 1996

C. Anna Ulaszewski
Program Manager
Long Beach Naval Shipyard
300 Skipjack Road
Long Beach, CA 90822-5099

**QUARTERLY GROUNDWATER MONITORING REPORT, FIRST QUARTER 1996, - NEX
GAS STATION - LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA,
(File No. 90-76)**

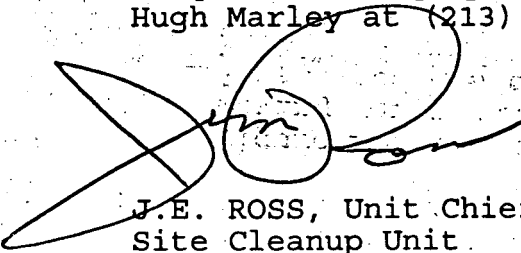
The Los Angeles Regional Water Quality Control Board has received and reviewed the Quarterly Groundwater Monitoring Report, First Quarter, 1996, for the Former Long Beach Naval Station NEX Gas Station. Our comments are as follows:

Figure 1-6 indicates that the dissolved phase benzene plume is moving in a southwest direction between MW-16 and MW-18. Please address this change in plume direction. Also include both a current groundwater elevation contour map, and a description of any significant changes in groundwater elevation or flow direction.

Based on Figures 1-6 and 1-10, we believe that additional control points are required between MW-15 and MW-17, between MW-16 and MW-17, and between MW-16 and MW-18. We understand that the Navy is proposing to install additional groundwater monitoring wells at this site. A workplan for the above should be submitted to us, prior to beginning any work.

A copy of this regions requirements for Analyses for Methyl Tertiary Butyl Ether (MTBE) at Underground Tank Sites is enclosed for your guidance.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

C. Anna Ulaszewski, Long Beach Naval Shipyard
Page 2

cc: Alvaro Gutterez, Department of Toxic Substances Control
CDR Anthony Didomenico, Naval Shipyard Long Beach
✓ Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Mr. Duane Rollefson

Enclosure

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

401 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



April 12, 1996

Interested Parties**ANALYSIS FOR METHYL TERTIARY BUTYL ETHER (MTBE) AT UNDERGROUND
TANK SITES**

MTBE is a major component of gasoline that is now being detected in drinking water wells throughout California. The threat to human health from MTBE is being evaluated at this time by the United States Environmental Protection Agency (U.S.EPA), and the California Department of Health Services has advised that all drinking water wells should be tested for MTBE, especially if they are located near leaking underground storage tanks.

We are therefore requiring that MTBE be included in the analysis of all soil and groundwater samples collected at all leaking underground gasoline tank sites, in addition to the analyses already being performed. The MTBE results should be included with the other analytical results in the assessment report, or the groundwater monitoring report for that sampling period. Separate reporting of MTBE is not necessary.

The commercial analytical laboratories have indicated that MTBE can be identified and quantified at little or no additional expense using U.S.EPA method 8020. This is the same method that is routinely used to analyze for aromatic hydrocarbons (benzene, toluene, ethylbenzene, and xylenes).

We will evaluate the need for additional MTBE monitoring on a case-by-case basis based on our review of the results we receive.

The analytical data will provide a better understanding of the extent of MTBE contamination and will help assess the risk to public health and the environment so that effective and appropriate remedial measures can be developed.

If you have any questions concerning this letter, please contact the project engineer for your case, or call Anne Saffell, the supervisor of the Underground Tanks Section, at (213) 266-7520.

Robert P. Ghirelli

ROBERT P. GHIRELLI, D.Env.
Executive Officer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

75 Hawthorne Street
San Francisco, CA 94105

September 17, 1996

Attn: Rick Jensen
Long Beach Naval Shipyard Environmental
Protection Division, code 1171
300 Skipjack Road
Long Beach, CA 90822-5099

Dear Mr. Jensen:

The United States Environmental Protection Agency (USEPA) received the Draft Environmental Baseline Survey (EBS) for Long Beach Naval Shipyard dated July 1996. We have reviewed this document and EPA's comments are attached.

Thank you for the opportunity to assist in the base closure process at the Shipyard by taking part in the formulation and review of closure documents.

If you have any questions about these comments, you may call Judith Winchell, Base Closure Specialist at (415) 744-2418 or me at (415) 744-2388.

Sincerely,

A handwritten signature in black ink, appearing to read "Martin Hausladen", is written over a horizontal line.

Martin Hausladen
Remedial Project Manager

cc: Judith Winchell, EPA
Sharon Lemieux, DTSC
Hugh Marley, RWQCB-LA

Draft Environmental Baseline Survey (EBS) at Long Beach Naval
Shipyard Los Angeles County, California

General comment:

Please include a figure or map that shows the groundwater flow? If none exists at this time then it would be difficult to dismiss groundwater contamination (that is, in fact, an actual presence) from consideration as a risk factor. In other words this entire area under discussion should be Environmental Condition Category 7 (Unevaluated Areas or Areas Requiring Additional Evaluation).

In addition, at the first mention of any acronym in the text please define it precisely.

Acronyms/Abbreviations

page ix

CORTESE: the definition is missing

page xi

SAP: Satellite Accumulation Points

Isn't there another definition for this acronym that might be found in this document? (i.e. Sampling and Analysis Plan) Please differentiate between these if both happen to occur in this document.

Figure 1-3

This is identified as Long Beach Naval Shipyard but it in fact the entire LB Naval Complex. Please outline the Shipyard, if possible, or re-name the figure.

page 3-6 Table 3-1 Shipyard Shop Processes and Services

Where can "location" areas be found on figures or maps in this document? Please cross-reference. Is this, in fact, useful information?

page 4-3 Section 4.1.4 Hydrology

1st sentence

Please describe what part of Long Beach Shipyard is identified as Terminal Island? Cross reference, also, to a figure which identifies it in relation to LB Complex.

page 5-2 Section 5.1.2 Investigations - 1969 - 1989

RCRA Facility Assessment (RFA) 3rd sentence

"the five SWMUs" should also be identified by IRP Site number for clarity (it isn't clear that these are IRP Sites 8-13).

page 5-2 Section 5.1.3 IRP Site 8

2nd paragraph

Is "the soil" referred to surface or subsurface soil? Please be precise for clarity.

page 5-3 IRP Site 10
2nd paragraph
same comment as page 5-2

IRP Site 11
2nd paragraph
The AOPC was redefined but it is not clear why (besides based on data newly collected). Does this now characterize the area fully, will aid in categorization, and therefore the transfer process?

1st bullet
Wouldn't "sandblast grit" impact groundwater?

page 5-4 IRP Site 12
1st and 2nd bullets
Are the soils surface or subsurface? Please be specific. In addition, define "high concentration".

IRP Site 13
1st paragraph, last sentence
What is the definition of a "large" spill?

Section 5.1.4 IRP Site Findings
In this section HI, NIOSH, OSHA are referred to as standards for contamination levels. Please describe each one, agency, purpose and why each is used and why are many used (it appears). Please provide the upper and lower limits of probable carcinogenic effect? Why not one standard, like EPA's PRG table?

It is important to make the significance of any numbers used consistent, the conclusions obvious and the presentation clear. In fact, all the quantification of risk could be combined into a chart or table. The text would provide explanation and conclusion. The chart could succinctly show not only the risk of each IRP Site in relation to the standard(s) but would demonstrate risk of the sites in relation to each other. A figure or map could be included here to facilitate visualization.

In addition, it might be more appropriate in the EBS to describe the findings in text and cross reference where the data is to be located in the more technical documentation that would substantiate it. And where the data's validity would be reviewed and evaluated by technical staff.

Site 8, 1st paragraph
Please describe "point of departure"

2nd paragraph
"...noncarcinogenic effects are unlikely associated with the soil." This double negative suggests that carcinogenic effects are likely associated with the soil. Please clarify this statement.

Site 10

"The COPCs identified in the surface soil show no evidence of carcinogenicity."

Is this accurate wording? What are these COPCs? What are the numbers that would support "no evidence"?

page 5-6, Site 12

1st paragraph

Please describe "point of action"

3rd paragraph

Please define COCs in the text.

Site 12 and 13

1st bullet

Please state the site number for AOPC2.

What is the standard used to estimate cancer risk?

2nd and 3rd bullets

What is standard used to define "background threshold", how was background decided, and what is it?

Section 5.1.5 Recommended Action

Please define, describe "NCP departure point"?

Page 5-7 Section 5.1.6 Site 6B-UST, Marine Corps Reserve Center (MCRC) Area and Ferry Street Area

What was the standard used for the screening risk assessment?

What are the "industrial, excavations and residential scenarios"?

Would it be useful to include what these ranges are and what they represent as far as potential for risk?

Page 5-11 Section 5.2.5 Lead

Lead Based Paint 2nd paragraph

Is there a Table showing buildings built before 1978? Please justify "no further action"? What is the condition? Will these be demolished? Why is there no risk of lead based paint chips being present in soils now or in the future?

Page 5-12 Section 5.2.7 Radon

Please state what the "gas levels" are. For instance, "All samples taken were below 4pC/L" and define pC/L (it is not in list of acronyms).

Page 5-13 Section 5.2.12 Asbestos

Is there an inventory of the buildings that would provide more detailed description. How many buildings are involved? When were they constructed?

Page 5-14 Section 5.2.14 PCBs

last paragraph

Please define "84 ppm". What is the condition of the existing PCB contaminated transformers, and will they be replaced or removed?

Page 6-1 Section 6.2 Land Use to the East and West
4th paragraph

Was the EE/CA finalized May 1996? Is the removal action on schedule for October 1996? Please add this information if it is now available.

Page 7-2 Section 7.1 Property Classification

Given the groundwater and soil contamination at the Shipyard and the need for more investigation, the entire facility should be characterized as Type 7 (Areas that are unevaluated or require additional evaluation).



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

5090

SER 1170/4835

September 20, 1996

**California Environmental Protection Agency
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444
Attn: Alvaro Gutierrez**

Dear Mr. Gutierrez:

Enclosure (1) is the Draft Responses to Comments for the Draft Remedial Investigation (RI) for IR Sites 8 through 13 at Long Beach Naval Shipyard for your review and distribution. A meeting will be scheduled for sometime in October; at that time the attached comments and corresponding responses will be discussed and resolved.

If you have any questions, please do not hesitate to contact Akille Gessesse, Bechtel National, Inc. at (310) 807-2465 or Kurt Baer, S.W. Division, Naval Facilities Engineering Command, at (619) 532-3329.

Sincerely,

C. Anna Ulaszewski

**C. Anna Ulaszewski
BRAC Environmental Coordinator
By directing of the Commanding Officer**

Enclosure:

(1) Draft Responses to comments for the Draft Remedial Investigation Report (RI) Installation Restoration Sites 8 through 13, Long Beach Naval Shipyard, Long Beach, California

Copy to:

**Martin Hausladen, USEPA (2 copies)
Hugh Marley, RWQCB-LA (1 copy)**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



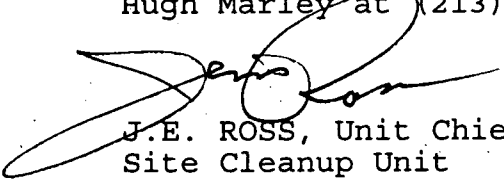
September 30, 1996

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

**FINAL QUARTERLY GROUNDWATER MONITORING REPORT, SECOND QUARTER
1996, - NEX GAS STATION - LONG BEACH NAVAL SHIPYARD, LONG BEACH,
CALIFORNIA, (File No. 90-76)**

The Los Angeles Regional Water Quality Control Board has received and reviewed the Final Quarterly Groundwater Monitoring Report, Second Quarter, 1996, for the NEX Gas Station at the Long Beach Naval Shipyard. Our comments on the document were resolved during a meeting with the Navy, and their contractors, in August 1996. Based on the above, we have no further comments on the quarterly report at this time.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitterez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego



Cal/EPA

October 28, 1996

Department of
Toxic Substances
Control

Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

245 West Broadway,
Suite 425
Long Beach, CA
90802-4444

Ms. Melanie Ault
Code 232.MA
Department of the Navy
Southwest Division
Naval Facilities Engineering Command
1420 Kettner Boulevard, Suite 507
San Diego, California 92132-2404

**DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE DISPOSAL
AND REUSE OF THE NAVAL SHIPYARD LONG BEACH, CALIFORNIA**

Dear Ms. Ault:

Thank for the opportunity to provide comments on the scoping of the draft Environmental Impact Statement (EIS) for the Disposal and Reuse of the Long Beach Naval Shipyard (LBNSY), California. As the lead State of California regulatory agency for investigation and remediation of hazardous substances at the Long Beach Naval Complex (LBNC), the Department of Toxic Substances Control (DTSC) would like to provide the following comments for incorporation into the Draft Environmental Impact Statement (EIS).

Currently the California Environmental Protection Agency (Cal-EPA) in conjunction with the U.S. Environmental Protection Agency (U.S. EPA) is overseeing the investigation and remediation of eight (8) Installation Restoration Program (IRP) sites at the LBNSY (including site 7 and 6A-water tank parcel). In addition, numerous points of interest (POI) have been identified which need to be further investigated (see table 3-1a of the LBNSY BRAC Cleanup Plan (BCP)). The EIS should discuss the possible impact of the proposed reuse to the on-going remediation efforts and provide for the mitigation for any adverse impact.



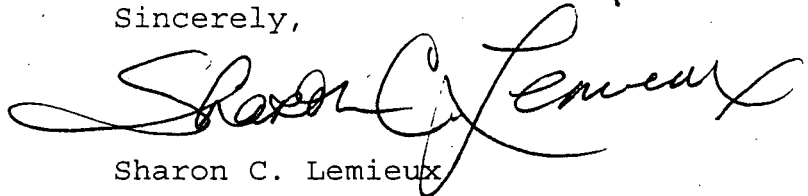
Printed on Recycled Paper

Ms. Ault
October 28, 1996
Page 2

It is possible that some IRP sites would require no further action (NFA) provided institutional or engineering controls are implemented. The EIS should address the possible release of hazardous constituents to the environment from any proposed construction. The required air monitoring and other health and safety issues pertaining to construction workers any the public should be discussed in the EIS.

Please forward a copy of the draft EIS for our review and comment. Should you need additional information, please contact me at (310) 590-4873.

Sincerely,

A handwritten signature in dark ink, appearing to read "Sharon C. Lemieux", is written over the typed name.

Sharon C. Lemieux
Hazardous Substances Scientist
Base Closure and Conversion

cc: Mr. Alvaro Gutierrez
Remedial Project Manager
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Hugh Marley
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Ms. Ault
October 28, 1996
Page 3

Mr. Alan Lee
BRAC Environmental Coordinator
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181

Mr. Martin Hausladin
Remedial Project Manager
U.S. Environmental Protection Agency
75 Hawthorne Street (H-9-2)
San Francisco, California 94105



DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132-5190

5090
Ser 56LB.KB/065
October 31, 1996

Mr. Alvaro Gutierrez
Department of Toxic Substances Control
Region IX
245 W. Broadway, Suite 425
Long Beach, CA 90802-4444

Dear Mr. Gutierrez:

Enclosed is a copy of the results of the tin reanalysis (based on EPA comments) for samples collected at Site 12 on August 29, 1996. Reanalysis of soil samples at Site 12 for speciation of Mono di, and tributyl tins. Samples were received by Columbia Analytical Services on August 30, 1996, and have been subsequently on September 11, 1996, and September 13, 1996.

All samples were collected at the same sample locations and at the same depths as were done under the previous study except at one location (HP-12-14), which was inaccessible and was replaced by SP-12-04, which is in close proximity to the original HP-12-14 sample location. A comparison of the results of the reanalysis and the old tin data is presented in Table 1. All reanalyzed samples have a lower detection limit than the ones analyzed previously and have been "J" qualified for the ones that are detected between the detection limit of 0.3 ug/KG and the reporting limit of 1 ug/KG. All results compare well with the previous data and are below the reporting limit of 1ug/KG. A copy of the laboratory and the validation report validated by Laboratory Data Consultants of Carlsbad, California are being sent to Ms. Karla Brasaemle for review.

Sincerely,

A handwritten signature in cursive script, reading "Kurt Baer", is positioned above the typed name.

KURT BAER
Remedial Project Manager
By direction of the Commander

Encl:

(1) Comparison of New 1996 Tin Data Vs Old 1994 Tin Data

5090
Ser 56LB.KB/065
October 31, 1996

Copy to:
Mr. Martin Hausladen
Department of Toxic Substances Control
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Mr. Hugh Marley
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

Ms. Karla Brasaemle
Ray F. Westion, Incorporated
700 5th Avenue, Suite 5700
Seattle, WA 98104-5057

Table 1															
Comparison of new 1996 TIN data Vs old 1994 TIN data															
STATION ID	ANALYTE NAME	RESET TYPE	NEW DETECTION LIMIT	NEW RESULT	UNITS	NEW LAB QUALIFIER	NEW TOP DEPTH	NEW BOTTOM DEPTH	STATION ID	OLD DETECTION LIMIT	OLD RESULT	UNITS	OLD LAB QUALIFIER	OLD TOP DEPTH	OLD BOTTOM DEPTH
SP-12-04	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	3.5	4	HP-12-14	1	4	UG/KG	U	3.5	4
SP-12-04	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	3.5	4	HP-12-14	1	4	UG/KG	U	3.5	4
SP-12-04	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	3.5	4	HP-12-14	1	4	UG/KG	U	3.5	4
SP-12-01	DIBUTYLTIN	TRG	0.3	3	UG/KG	U	3.5	4	SP-12-01	1	1	UG/KG	U	3.5	4
SP-12-01	MONOBUTYLTIN	TRG	0.3	0.8	UG/KG	J	3.5	4	SP-12-01	1	1	UG/KG	U	3.5	4
SP-12-01	TRIBUTYLTIN	TRG	0.3	0.5	UG/KG	J	3.5	4	SP-12-01	1	1	UG/KG	U	3.5	4
SP-12-01	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	5.5	6	SP-12-01	1	1	UG/KG	U	5.5	6
SP-12-01	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	5.5	6	SP-12-01	1	1	UG/KG	U	5.5	6
SP-12-01	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	5.5	6	SP-12-01	1	1	UG/KG	U	5.5	6
SP-12-01	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	6	6.5	SP-12-01	1	1	UG/KG	U	6	6.5
SP-12-01	MONOBUTYLTIN	TRG	0.3	0.6	UG/KG	J	6	6.5	SP-12-01	1	1	UG/KG	U	6	6.5
SP-12-01	TRIBUTYLTIN	TRG	0.3	0.3	UG/KG	J	6	6.5	SP-12-01	1	1	UG/KG	U	6	6.5
SP-12-02	DIBUTYLTIN	TRG	1	1	UG/KG	U	2	2.5	SP-12-02	1	1	UG/KG	U	2	2.5
SP-12-02	MONOBUTYLTIN	TRG	1	1	UG/KG	U	2	2.5	SP-12-02	1	1	UG/KG	U	2	2.5
SP-12-02	TRIBUTYLTIN	TRG	1	1	UG/KG	U	2	2.5	SP-12-02	1	1	UG/KG	U	2	2.5
SP-12-02	DIBUTYLTIN	TRG	0.3	0.3	UG/KG	J	5.5	6	SP-12-02	1	1	UG/KG	U	5.5	6
SP-12-02	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	5.5	6	SP-12-02	1	1	UG/KG	U	5.5	6
SP-12-02	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	5.5	6	SP-12-02	1	1	UG/KG	U	5.5	6
SP-12-03	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-03	1	1	UG/KG	U	2	2.5
SP-12-03	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-03	1	1	UG/KG	U	2	2.5
SP-12-03	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-03	1	1	UG/KG	U	2	2.5
SP-12-03	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	5	5.5	SP-12-03	1	1	UG/KG	U	5	5.5
SP-12-03	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	5	5.5	SP-12-03	1	1	UG/KG	U	5	5.5
SP-12-03	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	5	5.5	SP-12-03	1	1	UG/KG	U	5	5.5
SP-12-03	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	6	6.5	SP-12-03	1	1	UG/KG	U	6	6.5
SP-12-03	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	6	6.5	SP-12-03	1	1	UG/KG	U	6	6.5
SP-12-03	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	6	6.5	SP-12-03	1	1	UG/KG	U	6	6.5
SP-12-04	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-04	1	1	UG/KG	U	1.5	2
SP-12-04	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-04	1	1	UG/KG	U	1.5	2
SP-12-04	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-04	1	1	UG/KG	U	1.5	2
SP-12-05	DIBUTYLTIN	TRG	1	1	UG/KG	U	1.5	2	SP-12-05	1	40	UG/KG	U	1.5	2
SP-12-05	MONOBUTYLTIN	TRG	1	1	UG/KG	U	1.5	2	SP-12-05	1	40	UG/KG	U	1.5	2
SP-12-05	TRIBUTYLTIN	TRG	1	1	UG/KG	U	1.5	2	SP-12-05	1	40	UG/KG	U	1.5	2
SP-12-07	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	2.5	3	SP-12-07	1	1	UG/KG	U	2.5	3
SP-12-07	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	2.5	3	SP-12-07	1	3	UG/KG	U	2.5	3
SP-12-07	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	2.5	3	SP-12-07	1	1	UG/KG	U	2.5	3
SP-12-08	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-08	1	4	UG/KG	U	1.5	2
SP-12-08	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-08	1	2	UG/KG	U	1.5	2
SP-12-08	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-08	1	1	UG/KG	U	1.5	2
SP-12-09	DIBUTYLTIN	TRG	1	1	UG/KG	U	1.5	2	SP-12-09	1	4	UG/KG	U	1.5	2
SP-12-09	MONOBUTYLTIN	TRG	1	1	UG/KG	U	1.5	2	SP-12-09	1	4	UG/KG	U	1.5	2
SP-12-09	TRIBUTYLTIN	TRG	1	1	UG/KG	U	1.5	2	SP-12-09	1	4	UG/KG	U	1.5	2
SP-12-18	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-18	1	1	UG/KG	U	2	2.5
SP-12-18	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-18	1	1	UG/KG	U	2	2.5
SP-12-18	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-18	1	1	UG/KG	U	2	2.5
SP-12-22	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-22	1	1	UG/KG	U	1.5	2
SP-12-22	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-22	1	1	UG/KG	U	1.5	2
SP-12-22	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	1.5	2	SP-12-22	1	1	UG/KG	U	1.5	2
SP-12-22	DIBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-22	1	1	UG/KG	U	2	2.5
SP-12-22	MONOBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-22	1	1	UG/KG	U	2	2.5
SP-12-22	TRIBUTYLTIN	TRG	0.3	1	UG/KG	U	2	2.5	SP-12-22	1	1	UG/KG	U	2	2.5



Cal/EPA

November 4, 1996

Department of
Toxic Substances
Control

245 West Broadway,
Suite 425
Long Beach, CA
90802-4444

Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

Ms. C. Anna Ulaszewski
BRAC Environmental Coordinator
Department of the Navy
Long Beach Naval Shipyard
300 Skipjack Road
Long Beach, California 90822-5099

**LONG BEACH NAVAL SHIPYARD DRAFT ENVIRONMENTAL BASELINE
SURVEY**

Dear Ms. Ulaszewski:

Thank you for the opportunity to review the Draft Response to Comments, dated October 8, 1996 (received via telefax on October 31, 1996) on the subject document dated July 18, 1996. In general, the Department of Toxic Substances Control (DTSC) believes most of our concerns have been adequately addressed. The DTSC only has a few minor comments.

The response provided for comment VII.1.a. does not address the comment. Please revise the response to address the comment. Comment VIII.1.c. requests that a table be provided showing a list of all environmental concerns on each section. The response states that this information will be included in the BRAC Cleanup Plan (BCP). The DTSC believes that all information should be included in the EBS which impacts the environmental condition of property while the BCP should provide the strategy for cleanup. Therefore, we believe that the requested table should be provided in the EBS.



Ms. Ulaszewski
November 4, 1996
Page 2

Should you have any questions, please contact me at
(310) 590-4873.

Sincerely,



Sharon C. Lemieux
Hazardous Substances Scientist

cc: Mr. Martin Hausladin
Remedial Project Manager
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency
75 Hawthorne Street (H-9-2)
San Francisco, California 94105-3901

Mr. Alvaro Gutierrez
Remedial Project Manager
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Hugh Marley
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Ms. Judith Winchell
Base Closure Specialist
U.S. Environmental Protection Agency
75 Hawthorne Street (H-9-2)
San Francisco, California 94105-3901

Mr. Alan Lee
BRAC Environmental Coordinator
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



November 21, 1996

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

REQUEST TO ELIMINATE QUARTERLY MONITORING FOR METHYL ETHYL KETONE (MEK), AND TO BYPASS THE OIL WATER SEPARATOR (OWS) AT THE NEX GAS STATION - LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA, (File No. 90-76)

The Los Angeles Regional Water Quality Control Board has received, under separate covers, the Navy's November 21, 1996, requests for the following: a) to eliminate quarterly monitoring for MEK, at the NEX Gas Station, based on the results of the ongoing quarterly monitoring program, and; b) to bypass the OWS integral to the remediation system at the NEX Gas Station in order to increase the capacity of the treatment system.

We have no objection to the above mentioned requests being implemented. If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitierrez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

**5090
SER 1170/4855
21 NOV 96**

From: Commander, Long Beach Naval Shipyard

**Subj: FINAL ENVIRONMENTAL BASELINE SURVEY (EBS) AT LONG
BEACH NAVAL SHIPYARD, LOS ANGELES, COUNTY, CALIFORNIA**

**Encl: (1) Final Environmental Baseline Survey - Long Beach Naval
Shipyard**

- 1. The Long Beach Naval Shipyard Environmental Baseline Survey is enclosed for your information and use.**
- 2. If you have any questions, please do not hesitate to contact C. Anna Ulaszewski, Long Beach Naval Shipyard, at (310) 980-6888, or Kurt Baer, S.W. Division, Naval Facilities Engineering Command, at (619) 532-3329.**

C. Anna Ulaszewski
C. ANNA ULASZEWSKI
By direction

Distribution:

Kurt Baer, Southwest Division (8 copies)
Martin Hausladen, USEPA (2 copies)
Sharon Lemieux, CALEPA, DTSC (1 copy)
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Kathy Stevens, BNI (1 copy)

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



November 22, 1996

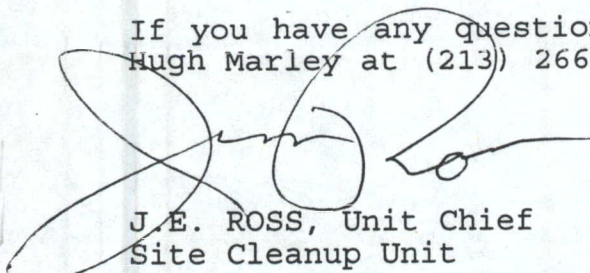
Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

**DRAFT WORK PLAN ADDENDUM, AIR SPARGING PILOT TEST, NEX GAS STATION,
LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (File No. 90-76)**

The Los Angeles Regional Water Quality Control Board has received and reviewed the Draft Work Plan Addendum, Air Sparging Pilot Test for the NEX Gas Station at the Long Beach Naval Shipyard, dated November 5, 1996. Our comments are as follows:

- . We are enclosing a copy of our Requirements For Groundwater Investigation for your information. Include our requirements for monitoring well development in Section 4.3.1 of the draft work plan.
- . It is unclear as to whether the temporary monitoring wells will be purged prior to sampling. Please clarify.
- . Notify Board staff at least 72 hours prior to initiating the Pilot Test.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitterez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego

Enclosure

STATE OF CALIFORNIA
California Regional Water Quality Control Board
Los Angeles Region

REQUIREMENTS
For
GROUNDWATER INVESTIGATION
(WELL INVESTIGATION PROGRAM)

These requirements are to be used for hydrogeologic assessments and groundwater monitoring programs to determine:

1. Impacts of discharges on groundwater quality,
2. Lateral and vertical extent of contaminant plume(s),
3. Groundwater gradient and direction of flow, and
4. Specific aquifer properties as required.

WORKPLAN: A workplan must be submitted to meet the General Requirements For Subsurface Investigation and shall also include, but not be limited to, the following:

1. Provide a map, to scale, showing the location(s) of the proposed well(s) and nearby existing well(s).
2. Provide well design, specifications and construction details including casing and screen materials, screen length and placement with respect to water table, depth and type of annular seal.
3. Propose and explain drilling method(s) to be used and decontamination procedures.
4. Provide disposal plans for soil cuttings and development water.

FIELD PROCEDURE: The following investigation procedures must also be addressed in the workplan at a minimum.

MONITORING WELL CONSTRUCTION/DEVELOPMENT

1. Use a minimum of 4" diameter, stainless steel wire-wrapped screen.
2. Do not penetrate a competent clay layer below the saturated zone. Conduct physical and hydraulic tests to determine competency of any confining zone materials. Take a sample of the confining clay at the end of borehole for chemical analysis.
3. Suspend and centralize casing such that it is not resting against the sides nor bottom of the hole prior to fixing in place.
4. Place grout of either cement, bentonite or mixture in an appropriate manner to avoid bridging.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



December 18, 1996

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.SR
1220 Pacific Highway
San Diego, CA 92132-5183

**UNDERGROUND STORAGE TANK (UST) AND OIL WATER SEPARATOR (OWS)
REMOVAL REPORT FOR UST Nos.: 258-1a, 1B, 1C, 1D, AND 1E; 419-1; 756-
3, AND 756-4, OWS Nos.: 401-1; 673-1 AND 673-2; 676-1; 756-1, -2,
AND -5; 815-1, AND ABOVE GROUND STORAGE TANK (AST) No. 756-6, LONG
BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE NO. 90-75)**

We have received and reviewed the Navy's December 10, 1996, UST and OWS Removal Report for eight USTs, eight OWSs, and one AST, located at the Long Beach Naval Shipyard. We concur with the Navy's "no further action" recommendation for: UST No. 258-1a, 1B, 1C, 1D, 1E, 419-1, 756-3, and 756-4, OWS No. 401-1, 673-1, 673-2, 676-1, 756-1, -2, -5, and 815-1, and AST No. 756-6.

If you have any questions or comments regarding the above, please contact Hugh Marley at (213) 266-7669.

A handwritten signature in black ink, appearing to read "J.E. Ross".

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Gutterez, Department of Toxic Substances Control
Faiq Aljabi, Navy Southwest Division, San Diego
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Ms. Anna Ulaszewski, Naval Shipyard long Beach



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

5090
SER 1170/4862
13 FEB 97

From: Commander, Long Beach Naval Shipyard

**Subj: DRAFT PRELIMINARY ASSESSMENT FOR THE POINTS OF
INTEREST AT LONG BEACH NAVAL SHIPYARD, LOS ANGELES
COUNTY, CALIFORNIA**

**Encl: (1) Draft Preliminary Assessment (PA) for the Points of Interest
(POIs) - Long Beach Naval Shipyard**

1. The above referenced document is enclosed for your review and comments.
2. Please provide your written comments by March 3, 1997, attention Ray Mills.
3. If you have any questions, please do not hesitate to contact Ray Mills or C. Anna Ulaszewski, Long Beach Naval Shipyard, at (562) 980-6888, or Kurt Baer, S.W. Division, Naval Facilities Engineering Command, at (619) 532-2004, ext. 11.

C. Anna Ulaszewski
C. ANNA ULASZEWSKI
By direction

Distribution:

Kurt Baer, Southwest Division (6 copies)
Martin Hausladen, USEPA (2 copies)
Alvaro Gutierrez, CALEPA, DTSC (2 copies)
Hugh Marley, RWQCB-LA (1 copy)
Kathy Stevens, BNI (1 copy)
John Essington, RAB (1 copy)
David Sundstrom, RAB (1 copy)
Donna DiRocco, RAB (1 copy)
Richard Landgraff, RAB (1 copy)

PRELIMINARY DATA QUALITY OBJECTIVES FOR THE EXPANDED SITE INSPECTION AT IR SITE 14

The following text discusses the preliminary data quality objectives (DQOs) for the Expanded Site Inspection (ESI) at Installation Restoration (IR) Program Site 14 (formerly Area of Potential Concern [AOPC] 5), Naval Station Long Beach (NAVSTA), Long Beach, California. The DQO process is used as a strategic planning approach to optimize the data collection activities for the ESI at IR Site 14. The process uses a systematic procedure for defining the criteria that a data collection design should satisfy. The results from the DQO process generate a scientific and resource-effective data collection design. For the ESI at IR Site 14, the seven step DQO process is summarized in **Table 1**. The results from the first six steps in the DQO process produce an optimized sampling design as presented in **Table 2**.

1.0 Step 1 - Statement of Problem

A Site Inspection (SI) was conducted for AOPC 5. Based on the observation that residual tetrachloroethylene (PCE) was observed in the soil, and free-phase PCE was observed in groundwater samples, AOPC 5 is now designated as IR Site 14. The results of the SI field activities, discussed below, define the basis for Step 1 of the DQO process for this ESI.

Analytical data from soil samples collected from IR Site 14, indicated that the highest PCE concentrations for both shallow and deep samples were detected beneath the loading dock area of Building 47. The highest concentrations of PCE were in residual form. Generally, PCE concentrations decreased with depth. The extent of PCE contamination with respect to the screening criteria adopted for the SI, the Industrial Soil Preliminary Remediation Goal (PRG), has been assessed. However, the impact of the PCE concentrations in soil to the underlying groundwater has not been fully assessed. Soil field screening criteria for the ESI have not been designated.

Laboratory results indicate that the maximum groundwater PCE concentration was also detected beneath the loading dock. The highest detected concentration of PCE in groundwater was in free-phase form. The elevated concentrations of PCE in groundwater extend to the north; however, the extent of PCE above the screening criteria adopted for groundwater, the California Ocean Plan (COP) Water Quality Objective (WQO), was not fully delineated beyond the northern and eastern perimeters of IR Site 14. Vertical extents of PCE and its transformation products (1,1-dichloroethene, 1,2-dichloroethene, trichloroethene, and vinyl chloride) have also not been fully assessed.

Preliminary DQOs for the ESI

The SI soil and groundwater data, and cone penetration test (CPT) data indicate that there are a series of relatively coarser-grained intervals separated by finer-grained intervals within the sediments beneath the site. The first fine-grained interval at IR Site 14 is typically encountered at depths of 5 to 10 feet (ft) below ground surface (bgs). The extents and continuity of this and deeper fine-grained intervals are important due to their potential impact on the migration of free-phase PCE, and further investigation of the lithology beneath the site is warranted.

IR Site 14 (Building 46) is currently a non-operational paved-area, is vacant, and there are no plans to develop this building for industrial/commercial purposes. The building is locked, and access is restricted. There are no occupancy-related human receptors. A risk assessment conducted for the most likely human receptor, a future demolition worker at IR Site 14, indicates a cancer risk greater than the unconditionally acceptable range of $1.0E-06$. The noncancer risk estimated for the future demolition worker exceeds 1.0 and indicates a potentially significant human-health risk. The risk posed by groundwater was not evaluated.

In summary, the statement of problems for soil are:

- the observation that free-phase PCE exists in saturated soil;
- the impact of the elevated concentrations of PCE in soil to the underlying groundwater has not been evaluated;
- soil field screening criteria for the ESI have not been established; and,
- the horizontal and the vertical extent of PCE and transformation product concentrations in soil may not be fully delineated to soil field screening criteria.

In summary, the statement of problems for groundwater are:

- free-phase PCE exists in groundwater;
- further investigation of the lithology beneath the site is warranted; and,
- the horizontal and the vertical extent of PCE concentrations in groundwater have not been fully delineated.

2.0 Step 2 - Identify the Decision

The primary decision question regarding the soil at IR Site 14 is as follows:

- Are the lateral and vertical extents of the PCE and transformation products, at concentrations exceeding the designated screening criteria, defined in the soil?

To address the primary question regarding the soil, the auxiliary decision questions for soil are:

- Have soil field screening criteria for this investigation been established and approved by the Navy and the regulatory agencies?

Preliminary DQOs for the ESI

- Is the quality and quantity of the analytical data sufficient to conduct a fate and transport analysis?
- Is further action warranted?
- Is the quality and quantity of the analytical data and lithological information sufficient to conduct a removal of the contaminated soil impacting the groundwater?

The primary question regarding the groundwater beneath the IR Site 14 area is:

- Are the lateral and vertical extents of the PCE and transformation products, at concentrations exceeding the designated screening criteria, defined in the groundwater?

To address the primary decision questions, the auxiliary decision questions for groundwater include:

- What are the groundwater flow directions and gradients for the sampled zone(s)?
- What is the lateral extent of PCE and its transformation products in groundwater at depths within the first-encountered finer-grained lithologic interval (within approximately 10 ft bgs)?
- Does this first-encountered finer-grained interval, where present, impede transport of PCE and its transformation products to the deeper, coarse-grained lithologic interval(s)?
- Are PCE and transformation products present in groundwater in the deeper lithologic interval(s)?
- If PCE and transformation products are reported in the deeper lithologic interval(s), do the concentrations suggest the presence of DNAPLs?
- What is the lateral extent of PCE and transformation products present in groundwater within the deeper lithologic interval(s)?
- Are the physical and geochemical parameters of the groundwater and the hydrogeologic data sufficient to evaluate the fate and transport of PCE and its transformation products?
- Is there a potential for the impacted groundwater to migrate beyond the limits of the study area?
- Is further action warranted?

3.0 Step 3 - Identify the Inputs to the Decisions

Information required to make the primary decisions in soil is as follows:

- information needed to establish field screening criteria for delineation of contamination in soil;

Preliminary DQOs for the ESI

- lateral and vertical extent of residual PCE and degradation compounds in the vadose zone soil;
- lateral and vertical extent of PCE and degradation compounds in the vadose zone soil with respect to the field screening criteria;
- information needed to conduct a fate and transport analysis; and,
- information needed to determine if further action for soil is warranted.

Currently, the field screening criteria for PCE and its transformation products in soil have not been designated. As discussed briefly in the Statement of Problem, the SI used the Industrial Soil PRG of 17,000 micrograms per kilogram ($\mu\text{g/kg}$) as the screening criteria for PCE. The RWQCB has indicated that this soil concentration, although protective of human health under an industrial use scenario, does not account for potential migration of PCE and its transformation products to the underlying shallow groundwater. Soil field screening levels will be discussed further with the Navy and the regulatory agencies in a workshop which will be scheduled prior to the submittal of the Draft ESI Field Sampling Plan.

Information required to make the primary decisions in groundwater is as follows:

- definition of the stratigraphy and hydrogeology, including groundwater flow direction and hydraulic gradient;
- lateral and vertical extent of DNAPLs containing PCE and degradation compounds in the shallowest and underlying deeper water-bearing units;
- lateral and vertical extent of dissolved phase plumes containing PCE and degradation compounds in the shallowest and underlying deeper water-bearing units;
- information needed to conduct fate and transport analyses for both DNAPL and dissolved phase contamination; and,
- information needed to determine if further action for groundwater is warranted.

4.0 Step 4 - Define the Study Boundary

The boundaries for this investigation are defined by the following:

- Western border is defined by the western extent of the Building 45 parking lot;
- Southern boundary is defined by the southern edge of Coffman Avenue; and,
- Northern and eastern boundaries are defined by the adjacent Port of Long Beach properties to be included under the amendments to the Harbor Development Permit and the Right of Entry Permit.

The above lateral boundaries, illustrated on **Figure 1**, encompass both the soil and groundwater investigations.

Preliminary DQOs for the ESI

The IR Site 14 conceptual physical hydrogeologic model developed during the SI, shown on **Figure 2**, includes several relatively coarse-grained intervals separated by finer-grained intervals. The units, as designated in the SI (unit names are enclosed by quotes), are as follows:

- A “surficial coarse-grained interval” consisting of sand and silty sand comprising fill materials and native sediments is encountered from just below grade to depths of about 5 to 10 ft bgs, depending on the location. This unit is entirely above the water table.
- An underlying, shallow, finer-grained, generally 2- to 3.5-ft thick unit (“shallow finer-grained interval”), with individual silt, clay, and sand interbeds ranging in thickness from less than 1 inch to approximately 1 foot, extends at most locations to depths ranging between 9 and 11.5 ft bgs, but appears to pinch out to the north toward Seaside Avenue. The water level typically occurs either within this unit, or as much as approximately 1 foot below its base.
- A coarse-grained, water-bearing silty sand to sand interval (“first coarse-grained, water-bearing interval”) occurs below a minimum depth of about 9 ft bgs, and extends to depths of approximately 35 to 40 ft bgs (-20 to -29 ft MLLW). Beneath the northern portion of the site, this unit also includes an approximately 1- to 2-foot-thick silt (“-20 ft MLLW silt”) identified only by CPT data, at depths of approximately 28 to 30 ft bgs.
- A series of underlying deeper, alternating finer-grained and coarse-grained water-bearing intervals (identified only by CPT data) are encountered to the maximum depth reached, 70 ft bgs. The silt at approximately 35 to 40 ft bgs (“-30 ft MLLW silt”) and a deeper, thicker silt (“-40 MLLW silt”) appear to be more continuous than the -20 ft MLLW silt.

The first three units above were collectively termed the “upper coarse-grained, water-bearing interval” in the NAVSTA Long Beach and LBNSY RI Reports. The -30 ft MLLW silt and the thicker, -40 ft MLLW silt (and a silty sand/sand between them) were included within a unit termed the “fine-grained water-bearing interval” in the NAVSTA Long Beach and LBNSY RI Reports.

The vertical boundary for the groundwater portion of this investigation is defined as the top of the -40 ft MLLW silt, within the fine-grained water-bearing interval.

Time constraints will limit soil and groundwater sampling to a single event. Samples collected will be analyzed for chlorinated VOCs; however, this investigation is limited to PCE and its transformation products (1,1-dichloroethene, 1,2-dichloroethene, trichloroethene, and vinyl chloride). Additional geochemical parameters that may be deemed necessary for natural attenuation and fate and transport analyses will also be analyzed. Delineation of the contamination will be conducted until concentrations have reached the screening criteria applicable to each media, or until the study boundaries have been reached (whichever comes first).

Preliminary DQOs for the ESI

Sampling at off-site locations is limited by utility clearance concerns. Abundant underground utilities are located beneath and adjacent to Ocean Boulevard. In cases where a utility is encountered or sufficient clearance is not possible, it is anticipated that proposed sample locations will be moved up to 10 feet. Off-site sampling locations may also need to be adjusted based upon permit and access issues.

5.0 Step 5 - Develop a Decision Rule

Investigate PCE and Transformation Products in Soil

The first step in the investigation of soil for this ESI is to establish screening criteria which will consider the migration of contaminants to groundwater. Once the screening criteria have been established, the existing analytical data from the SI will be evaluated to determine the areas at IR Site 14 which require further delineation. The sample locations, presented in Section 7, will be adjusted accordingly.

Following the designation of soil screening criteria and the evaluation of existing data, the objectives of the field activities for soil will be to delineate the vertical and lateral extent of contamination within the study boundaries exceeding the screening criteria. It is anticipated that once these areas have been defined, if warranted, a removal action of soil will be considered by the Navy. The designation of criteria for a removal action in soil is not an aspect of this investigation; however, it is anticipated that the analytical data and lithological information, the risk assessment results, and the results of the fate and transport analysis of this investigation will support removal action process, if warranted.

The decision-tree diagram depicting the decision process to be employed during the investigation of PCE and transformation products in the soil is shown on **Figure 3**. This decision of the investigation will determine the vertical and lateral extent of the PCE and transformation products in the soil and will involve the collection of shallow and subsurface soil samples.

- If a field screening criteria for soil (which consider the migration of the contamination to the underlying groundwater) have been designated, then an evaluation of existing data will be conducted;
- If evaluation of the existing data identifies data gaps in the delineation of PCE and related compound concentrations to the designated field screening criteria, then soil samples will be collected to fill the data gaps;
- If the concentrations of PCE and/or transformation products in the collected soil samples exceed the field screening criteria, then vertical and lateral step-out samples will be collected as necessary until concentrations are below the field screening criteria, or until the study boundaries have been reached;
- If the extent of concentrations of PCE and/or transformation products in the soil samples which are at levels exceeding the field screening criteria have been defined or if the study boundaries have been reached (whichever comes first), then the field activities will be complete;

Preliminary DQOs for the ESI

- If the concentrations of PCE and transformation compounds are below the field screening criteria or if the study boundary has been reached, then the vertical and lateral investigation of soil will be considered complete.

Investigate PCE and Transformation Products in Groundwater

The groundwater aspect of this investigation focuses on PCE and its transformation products at concentrations above the designated field screening criteria in the upper coarse-grained, water-bearing interval. Samples will also be collected from within the fine-grained, water-bearing interval, at the vertical boundary for the groundwater portion of this investigation (top of -40 ft MLLW silt). The field sampling will be considered complete if PCE and transformation product concentrations within the study boundaries have been defined to the field screening criteria. A decision tree diagram has been developed to depict the decision process to be employed during the course of this groundwater investigation (**Figure 4**).

The following is a summary of this decision process for the evaluation of PCE and its transformation products in the upper coarse-grained, water-bearing interval.

- If PCE and/or transformation product concentrations in groundwater samples collected from the upper coarse-grained, water-bearing interval are above the field screening criteria, then additional deeper step-out samples will be collected until lateral extent with elevated concentration is defined.
- If PCE and/or transformation product concentrations in groundwater samples collected from within the fine-grained, water-bearing interval are above the COP criteria, step-out samples from within this unit will be collected, until lateral extent with elevated concentrations is defined.
- If PCE and transformation product concentrations in groundwater samples collected from the upper coarse-grained, water-bearing interval are below the COP criteria, then investigation is complete.

6.0 Step 6- Specify Limits in Decision Error

The sampling of soil and groundwater will be based on a judgmental sampling approach. A statistical (random) approach to identify the sampling locations is not proposed. Therefore, the uncertainty, which is typically quantified by confidence (Type 1 error), and power limits (Type 2 error) associated with statistically based sampling designs do not apply here.

Typical groundwater investigations are guided by site-specific hydrogeologic conditions. Sampling locations are selected based on the site conceptual model and previous findings. Information on hydraulic gradient and continuity of fine-grained material is crucial in the selection of sample locations. Data generated from field sampling and on-site mobile laboratory analyses, along with the site hydrogeologic conceptual model, will determine the locations of step-out samples. Once a groundwater plume is delineated to the screening criteria specified, the investigation will be considered complete.

Preliminary DQOs for the ESI

Decision errors will be considered, but they cannot be evaluated statistically. The locations will be based on available data and regulatory guidelines.

7.0 Step 7 - Optimize the Sampling Design

The proposed sampling design uses a judgmental sampling plan which incorporates the available information from previous investigations to focus this investigation on identified data gaps. The proposed sampling design includes a geophysical utility clearance, soil and groundwater sample collection, performing CPTs, and sampling newly installed and existing groundwater monitoring wells at IR Site 14. Sample locations are shown on **Figure 5**.

The sampling design for this investigation is as follows:

- Direct-push soil samples from up to 10 locations will be collected to delineate the extent of soil contamination with respect to the screening criteria. As indicated in Figure 5, preliminary soil sample locations have been designated along the perimeter of IR Site 14. A mobile laboratory will be located on site during field activities. If results indicate soil concentrations exceed screening criteria, then step-out sampling will be conducted, as appropriate, until study boundaries have been reached.
- CPT soundings to a depth of up to 80 ft bgs have been designated for 3 locations, based on a review of available SI data. The CPT soundings will provide hydrogeological and stratigraphical information. The data from the initial CPT locations, along with data from other aspects of the field investigation, will be used to determine the need for additional CPTs at up to 7 locations. Soil borings will also be installed and logged adjacent to three of the CPT locations, for lithological comparison to confirm and validate CPT results.
- Using the SI data, HydroPunch®-like groundwater sampling locations have been designated at 11 locations (at least some of which will have more than a single depth interval), as indicated on Figure 5. The samples will be analyzed by an onsite mobile laboratory. If concentrations exceed the screening criteria, step-out samples will be collected at the appropriate depths. Step-out HydroPunch®-like groundwater samples from up to 8 additional locations samples will be collected, as appropriate, until the study boundaries have been reached. Data from the HydroPunch®-like groundwater samples will be used in the selection of monitoring well locations.
- Up to 10 groundwater monitoring wells will be installed, developed and sampled (4 shallow, 3 intermediate, and 3 deep wells) to confirm HydroPunch®-like sample results and/or provide for long-term groundwater monitoring.
- Samples will also be collected from 5 existing wells at IR Site 14, and the facility-wide well located in the northwestern parking lot of Building 45.
- Mobile laboratory analyses will be conducted for HydroPunch®-like groundwater samples and soil samples to assist in field decision making for step-

Preliminary DQOs for the ESI

out sampling. Mobile laboratory samples will be analyzed for VOCs using EPA Method 8010/8020.

- Geotechnical analyses (grain size, Atterberg limits, moisture, and density) will also be performed on up to 10 selected soil samples.
- Field measurements of the following parameters will also be conducted on certain field-designated groundwater samples: specific conductivity, temperature, pH, turbidity, oxidation reduction potential (ORP), dissolved oxygen (DO) and iron (Fe²⁺).
- Soil and groundwater step-out samples with concentrations at or below the screening criteria, based on mobile laboratory analysis, will be sent to a stationary laboratory for confirmatory analysis.
- Stationary laboratory analysis will be conducted using 30 day turnaround time (TAT). Analytical methods will include: VOC (EPA 8260), and/or selected water quality/general chemistry analyses (e.g., dissolved iron and manganese, total organic carbon [TOC], total dissolved solids [TDS], alkalinity (including hydroxides, carbonates and bicarbonates), total Kjeldahl nitrogen [TKN], methane, ethane, ethene, pH, and anions including chlorides, nitrates, and sulfates).



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

5090
SER 1170/4867
March 7, 1997

California Environmental Protection Agency
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444
Attn: Alvaro Gutierrez

Dear Mr. Gutierrez:

Enclosed please find one (1) copy of the Strike Out Text and Response to Comments for the Draft Remedial Investigation (RI) Report (IR Sites 8 through 13) for your review and distribution. Due to the high volume of paper production, only pages with significant revisions are included from Sections 1 through 5.6. All of the Executive Summary and Sections 5.7 through Section 9 are also included. See the attached summary for details on each section and the appendices. Please note that the scheduled review period for this document is 30 days, which corresponds to April 7, 1997.

For questions or concerns regarding this document, please contact Mr. Kurt Baer, Southwest Division, Naval Facilities Engineering Command at (619) 532-2004, extension 11, or Aklile Gessesse of Bechtel National, Inc., at (562) 807-2454.

Sincerely,

C. Anna Ulaszewski
BRAC Environmental Coordinator
By direction of the Shipyard Commander

Encl:

Strike Out Text and Response to Comment for the Draft Remedial Investigation Report (IR Sites 8 through 13), Long Beach Naval Shipyard, Long Beach, California

Copy to:

Mr. Richard Selby, Southwest division (1 copy)
Mr. John Rogers, Southwest Division (1 copy)
Mr. Kurt Baer, Southwest Division (1 copy)
Ms. Anna Ulaszewski, LBNSY (1 copy)
Mr. Martin Hausladen, U.S. EPA (1 copy)
Mr. Hugh Marley, Cal EPA, LARWQCB (1 copy)

LONG BEACH NAVAL SHIPYARD REMEDIAL INVESTIGATION REPORT STRIKE-OUT TEXT SUBMITTAL

The following items are contained within the Draft Final Report strike-out text package:
(NOTE: some page numbers are different from draft report)

Text

- Executive Summary – strike-outs/inserts (all pages included)
- Section 1 – strike-outs/inserts (pages with significant revisions only)
- Section 2 – strike-outs/inserts (pages with significant revisions only)
- Section 3 – no significant revisions made; no text included
- Section 4 – strike-outs/inserts (pages with significant revisions only)
- Section 5
 - Subsections 5.1 through 5.6 – strike-outs/inserts (pages with significant revisions only)
 - Subsection 5.7 – strike-outs/inserts (all pages included)
- Section 6 – strike-outs/inserts (all pages included; new text is NOT underlined) *Risk Assessment*
- Section 7 – strike-outs/inserts (all pages included)
- Section 8 – strike-outs/inserts (all pages included)
- Section 9 – strike-outs/inserts (pages with significant revisions only)

Tables

- Executive Summary – strike-outs/inserts (single table, within text)
- Section 1 – single table; included, but new text is NOT underlined
- Section 2 – strike-outs/inserts (only tables with significant revisions are included)
- Section 3 – no table revisions; no tables included
- Section 4 – strike-outs/inserts (only Table 4-3, a new table, is included)
- Section 5
 - Subsection 5.1 – no table revisions; no tables included
 - Subsection 5.2 – strike-outs/inserts (only tables with significant revisions are included)
 - Subsection 5.3 – strike-outs/inserts (only tables with significant revisions are included)
 - Subsections 5.4 through 5.6 – no table revisions; no tables included
 - Subsection 5.7 – strike-outs/inserts (all tables included; some of new text is NOT underlined)
- Section 6 – strike-outs/inserts (all tables included) *Risk Assessment*
- Section 7 – strike-outs/inserts (all tables included; some are within text)
- Section 8 – strike-outs/inserts (all tables included; all are within text)
- Section 9 – no tables in this section

Figures (NOTE: figure revisions are NOT strike out/underlined)

- Executive Summary – single figure, within text
- Section 1 – only figures with significant revisions are included
- Section 2 – only figures with significant revisions are included
- Section 3 – no significant revisions; no figures included
- Section 4 – no significant revisions; no figures included
- Section 5
 - Subsections 5.1 through 5.6 – only figures with significant revisions are included
 - Subsection 5.7 – all figures included
- Section 6 – all figures included *Risk Assessment*
- Section 7 – all figures included
- Section 8 – all figures included
- Section 9 – no figures in this section

Appendices (NOTE: only Appendix P is included) *Risk Assessment* Appendix P (includes new Part VII)

Summary Tables of Responses to Comments



Roy F. Weston, Inc.
One Concord Centre, Suite 1580
2300 Clayton Road
Concord, California 94520-2148
510-603-7900 • Fax 510-603-7901

March 12, 1997

Mr. Martin Hausladen, SFD-8-2
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

W.O. 04900-006-013
DCN: 4900-06-13-AAAZ

Subject: **Review Comments on the Preliminary Final Finding
of Suitability to Lease for West End Property
(Parcels C, D, H, N, O, and P) at
Naval Training Center, San Diego**

Dear Martin:

Attached please find Roy F. Weston, Inc.'s (WESTON®) review comments on the "Preliminary Final Finding of Suitability to Lease for West End Property (Parcels C, D, H, N, O, and P) at the Naval Training Center, San Diego." These comments are included on the enclosed disk.

The review of this document required 5.5 hours technical LOE. If you have any questions, please contact me at (510) 603-7917.

Very truly yours,

ROY F. WESTON, INC.

Karla Brasaemle
Site Manager

KB/ed
Enclosures





Cal/EPA

March 20, 1997

Department of
Toxic Substances
Control

245 West Broadway,
Suite 425
Long Beach, CA
90802-4444

Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

Ms. C. Anna Ulaszewski
BRAC Environmental Coordinator
Department of the Navy
Long Beach Naval Shipyard
300 Skipjack Road
Long Beach, California 90822-5099

**LONG BEACH NAVAL SHIPYARD FINAL ENVIRONMENTAL BASELINE SURVEY
RESPONSE TO COMMENTS**

Dear Ms. Ulaszewski:

The Department of Toxic Substances Control (DTSC) has completed its review of the Response to Comments dated February 25, 1997, on the subject' document. DTSC finds that the Response to Comments adequately addresses our comments dated January 8, 1997.

DTSC is in the process of preparing a concurrence letter for the Environmental Baseline Survey (EBS). This letter will be signed by the Division Chief of the Office of Military Facilities. The letter should be issued by the end of March 1997.

Should you have any questions, please contact me at
(562) 590-4873.

Sincerely,

Sharon C. Lemieux
Hazardous Substances Scientist
Office of Military Facilities

cc: See Next Page.

Ms. Ulaszewski

March 20, 1997

Page 2

Mr. Martin Hausladen
Remedial Project Manager
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency
75 Hawthorne Street (SFD-8-2)
San Francisco, California 94105-3901

Mr. Alvaro Gutierrez
Remedial Project Manager
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Hugh Marley
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Ms. Judith Winchell
Base Closure Specialist
U.S. Environmental Protection Agency
75 Hawthorne Street (SFD-8-2)
San Francisco, California 94105-3901

Ms. Sharon Fair
Unit Chief
Environmental Assessment and Reuse
Base Closure and Conversion
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Alan Lee
BRAC Environmental Coordinator
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 20, 1997

MEMORANDUM

SUBJECT: Request for Review of: Strike Out Text and Response to
Comments for the Draft Remedial Investigation Report
Sites 8-13

FROM: Martin M. Hausladen , RPM, H-9-2

THROUGH: Xuan-Mai Tran, H-9-4
Work Assignment Manager

TO: Karla Brasaemle
Weston, Inc.

Review Focus: Review document for adequacy, completeness and acceptability. Provide written assessment of data useability and opinions on document adequacy. Prepare information in written and electronic format. Participate in conference calls or technical review meetings as appropriate. Complete task within 30 days of notice to proceed.

Hours: Strike Out Text review initial LOE not to exceed 60 hours.

Deadline: Complete all review by NLT April 20, 1997

If you have any questions, please contact me at (415) 744-2388



Cal/EPA

Department of
Toxic Substances
Control

March 27, 1997

Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

400 P Street,
4th Floor
P.O. Box 806
Sacramento, CA
95812-0806

Ms. C. Anna Ulaszewski
BRAC Environmental Coordinator
Department of the Navy
Long Beach Naval Shipyard
300 Skipjack Road
Long Beach, California 90822-5099

REQUEST FOR CONCURRENCE ON UNCONTAMINATED PROPERTY FOR LONG
BEACH NAVAL SHIPYARD (LBNSY), LONG BEACH, CALIFORNIA

Dear Ms. Ulaszewski:

The Department of the Navy has prepared an Environmental Baseline Survey (EBS) for the Long Beach Naval Shipyard (LBNSY) Main Station dated November 21, 1996, to comply with Section 120(h)(4) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Section 120(h)(4) of CERCLA requires closing military bases to identify property upon which no hazardous substances and no petroleum products or their derivatives were known to have been released or disposed of, including no migration of these substances from adjacent areas. CERCLA Section 120(h)(4) requires the State of California's (hereinafter referred to as the State) concurrence in the results of the identification. The EBS identifies 15 property sections consisting of a total of 260 acres. The LBNSY four off-base housing areas consisting of 186 acres were evaluated in a separate EBS.

As a result of the EBS efforts, no property was nominated by the Navy as "uncontaminated". All of the LBNSY property was designated an Environmental Condition of Property (ECP) type 6 or 7. The State concurs with the ECP category types. In the future the Navy may elect to



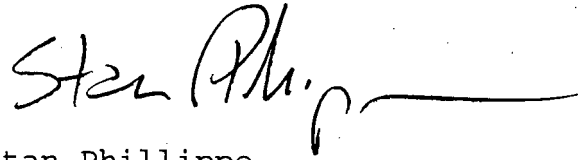
Printed on Recycled Paper

Ms. C. Anna Ulaszewski
March 27, 1997
Page 2

nominate property as uncontaminated. As additional information becomes available, the State will carefully review the information and re-categorize property accordingly.

If you have any questions regarding this letter, please do not hesitate to call Ms. Sharon Lemieux, Hazardous Substances Scientist, Environmental Assessment and Reuse Unit, at (562) 590-4873.

Sincerely,

A handwritten signature in dark ink, appearing to read "Stan Phillippe", followed by a long horizontal flourish.

Stan Phillippe
Division Chief
Office of Military Facilities

cc: Mr. Martin Hausladen
Remedial Project Manager
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency
75 Hawthorne Street (SFD-8-2)
San Francisco, California 94105-3901

Mr. Alvaro Gutierrez
Remedial Project Manager
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Hugh Marley
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754

Ms. C. Anna Ulaszewski

March 27, 1997

Page 3

cc: Ms. Judith Winchell
Base Closure Specialist
U.S. Environmental Protection Agency
75 Hawthorne Street (SFD-8-2)
San Francisco, California 94105-3901

Ms. Sharon Fair
Unit Chief
Environmental Assessment and Reuse
Base Closure and Conversion
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Alan Lee
BRAC Environmental Coordinator
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181



Roy F. Weston, Inc.
One Concord Centre, Suite 1580
2300 Clayton Road
Concord, California 94520-2148
510-603-7900 • Fax 510-603-7901

2 April 1997

Mr. Martin Hausladen, SFD 8-2
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

W.O. 04900-006-008
DCN: 4900-06-08-AABP

Subject: **Comments on the Strike Out Text and
Response to Comments for the
Draft Remedial Investigation (RI) Report
(IR Sites 8 through 13
Former Naval Station Long Beach**

Dear Martin:

Attached please find our comments on the "Strike Out Text and Response to Comments for the Draft Remedial Investigation (RI) Report (IR Sites 8 through 13), Former Naval Station Long Beach." The total effort associated with this review was 38 hours (LOE).

The file in Word Perfect 5.1 is included on the enclosed disk.

If you have questions, please contact me at (510) 603-7917.

Very truly yours,

ROY F. WESTON, INC.

Karla Brasaemle, R.G.
Site Manager

KB/ed
Enclosure





OHM Remediation Services Corp.

A Subsidiary of OHM Corporation

OHM TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT N68711-93-D-1459

DOCUMENT CONTROL NO: SW3402

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Dave Jespersen, Code 57CS1.DJ
Building 131
1220 Pacific Highway
San Diego, California 92132-5187

Date: 03-Apr-97

D.O.: 83

Location: NAVSHIPYD LONG BEACH

FROM: James Franklin FOR
Stewart Bornhoft, Program Manager

Ginger James, Contracts Manager

DESCRIPTION Final Remediation Work Plan, Removal of Diesel Contaminated Soil at
OF Building S-4 Boiler Plant, dated April 1, 1997.
ENCLOSURE:

TYPE: Contract Deliverable () D. O. Deliverable (X) Request for Change () Other ()
(S) (Tech)

VERSION: FINAL

REVISION 0

ADMIN RECORD: Yes () No (X) Category () Confidential ()

SCHEDULED DELIVERY DATE: 03-Apr-97 **ACTUAL DELIVERY DATE:** 03-Apr-97

NUMBER OF COPIES SUBMITTED TO THE NAVY: 1/O, 3/C, 3/E

[AS REQUIRED/DIRECTED BY THE (SOW)]

COPIES TO:

SWDIV

Name, Code

J. Rogers, 57CS3.JR (1C/1E)
K. Baer, 56LB.KB (1C/1E)
L. Protocollo, 56LB.LP (1C/1E)

OHM

Name, Location

File (1C/1E)
Chron (1C)
K. Williams, Irv (1C/1E)
J. Russo, Irv (1C/1E)
G. Alexander, Irv (1C/1E)

OTHER

Name, Company, Location

A. Gutteriz, DTSC (1C/1E)
F. Aljabi, Env. Lead (1C/1E)
H. Marley, RWQCB (1C/1E)
M. Hausladen, US EPA (1C/1E)
A. Ulaszewski, NSYLB (1C/1E)

Date/Time Received: _____ / _____



**OHM Remediation
Services Corp.**

A Subsidiary of OHM Corporation

April 1, 1997

Mr. Dave Jespersen
Contracting Officer, Code 57CS1.DJ
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5187

Attention: Mr. Kurt Baer, 56SD.KB

**RE: Final Remediation Work Plan, Removal of Diesel Contaminated Soil at
Building S-4 Boiler Plant, Naval Station Long Beach, California
Delivery Order 83, Revision 0**

Dear Mr. Kurt Baer,

This is to confirm the Draft Remediation Work Plan will be accepted as the Final Remediation Work Plan.

As per Mr. Hugh Marley, RWQCB, the cleanup levels for TPH as diesel and benzene, toluene, ethylbenzene and total xylenes (BTEX) will be based on screening levels and attenuation factors for 20-150 feet derived from LARWQCB guidance (LARWQCB, 1996). A cleanup criteria for soil of 10,000 milligrams per kilogram (mg/kg) for TPH as diesel will be used as closure criteria for the site. BTEX goals will be 0.066 mg/kg, 4 mg/kg, 15 mg/kg and 40 mg/kg, respectively.

If you require additional information please contact me at (714) 263-9124 extension 505.

Sincerely,

Kathleen R. Williams FOR

Kathleen R. Williams
Project Manager

CC: Alvaro Gutteriz, Department of Toxic Substances Control
Faiq Aljabi, Navy Southwest Division, San Diego
Linda Protocollo, Navy Southwest Division Contract Officer
Hugh Marley, Regional Water Quality Control Board
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Ms. Anna Ulaszewski, Naval Shipyard Long Beach

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE

MONTEREY PARK, CA 91754-2156

(213) 266-7500

FAX: (213) 266-7600



April 9, 1997

Ms. Anna Ulaszewski
Long Beach Naval Shipyard
Code 1171au
300 Skipjack Road
Long Beach, CA 90822-5000

**DRAFT GROUNDWATER INVESTIGATION WORKPLAN (SUPPLEMENT TO THE RI FOR
LONG BEACH NAVAL SHIPYARD) FOR IRP SITES 9, 12, AND 13 AT THE LONG
BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE NO. 90-75)**

We have received and reviewed the Navy's Draft Groundwater Investigation Workplan for IRP Sites 9, 12, and 13, at the Long Beach Naval Shipyard, dated February, 1997. Our comments are as follows:

The screening criteria described in Section 2.2.2.2 should be based on the beneficial use of the groundwater. If the investigation determines that the groundwater flow direction in the lower aquifer is towards the Harbor, then the California Ocean Plan criteria would be appropriate. However, if the groundwater is recharging the West Coast Basin, drinking water MCLs would apply. We understand that the appropriate screening criteria can not be determined until the proposed monitoring wells are installed. Therefore, as an interim measure, during the initial portion of the investigation into the lower aquifer, the Navy should consider adopting whichever screening criteria is more stringent for the chemicals of concern.

Figure 3-8 indicates that the base of the benzene contamination at SP-9-04 is not defined. In order to rule out the SP-9-04 area as a source for the benzene in the lower aquifer, we will require that the vertical extent of the shallow benzene contamination be defined, and a "clean zone" below the plume is identified.

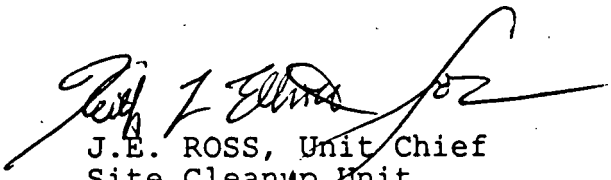
The groundwater around the recently excavated USTs north of building 128 and 129 is known to be contaminated. Groundwater characterization at these two sites were deferred, at the Navy's request, to this investigation. Please indicate which proposed soil gas samples, Hydropunch-type samples or groundwater monitoring wells, if any, will address these former UST sites. Also, indicate the status of the 1,000 gallon paint waste UST at Building 216, and whether the contamination being linked to it is being addressed.

Ms. Anna Ulaszewski

Page 2

- . Please indicate whether the solvent sump behind Building 129 is being investigated as a source for the shallow groundwater contamination. Include soil gas sampling points in the vicinity of the sump and soil sampling directly below the sump.
- . Indicate the number, or percentage, of samples that will be sent to the off-site laboratory for confirmatory analysis. Also, please notify us as to when the mobile laboratories will be on site.
- . Section 4.1.1.5 states that a condition for limiting the VOC investigation to the upper interval is if a vertical gradient is not present. We believe that the decision should also be based on whether VOCs are present at the base of the upper interval, on the existence of a vertical gradient between the upper and lower water bearing units, and whether a significant source exists, or existed.

If you have any questions or comments regarding the above, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitierrez, Department of Toxic Substances Control
Faiq Aljabi, Navy Southwest Division, San Diego
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



May 13, 1997

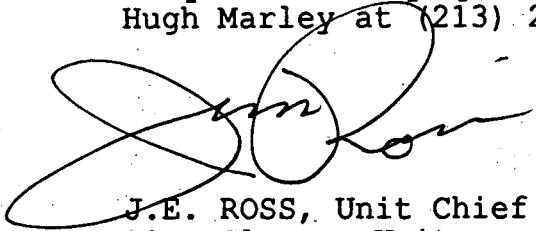
Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

**QUARTERLY GROUNDWATER MONITORING REPORT, FIRST QUARTER 1996, - NEX
GAS STATION - LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA,
(File No. 90-76)**

The Los Angeles Regional Water Quality Control Board has received and reviewed the Quarterly Groundwater Monitoring Report, First Quarter, 1996, for the NEX Gas Station at the Long Beach Naval Shipyard. Our comments are as follows:

- . Page 6-1 states that the flow direction in the northeastern portion of the site is not known. Indicate whether this portion is contained in the remediation systems capture zone. Identify if further hydraulic control is required in the northeast.
- . Recommendations for further action, based on the findings of the report should be included, as appropriate.
- . We suggest that, as a cost savings measure, the Navy reduce the number of groundwater monitoring wells being sampled at this site. Provide, for our approval, a list of monitoring wells that can be dropped from the monitoring program while still maintaining adequate plume coverage.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Gutterez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego

L:\CT0123\CONTACTS\CON0009.DOC



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

**5090
SER 1170/4874
04 JUN 97**

From: Commander, Long Beach Naval Shipyard

**Subj: FINAL PRELIMINARY ASSESSMENT FOR THE POINTS OF
INTEREST AT LONG BEACH NAVAL SHIPYARD, LOS ANGELES
COUNTY, CALIFORNIA**

**Encl: (1) Changes for Appendices F, G and H - Final Preliminary
Assessment (PA) for the Points of Interest (POIs).**

- 1. The "Environmental Survey for Disestablishment for the Less-than-90
Day Hazardous Waste Storage Areas" forms were incomplete as submitted
in Appendices F, G and H of the above referenced document.**
- 2. Please replace with the enclosed completed survey forms.**
- 3. We apologize for any inconvenience that this might have caused you.
If you have any questions, please do not hesitate to contact Ray Mills or C.
Anna Ulaszewski, Long Beach Naval Shipyard at (562) 980-6888.**

C. Anna Ulaszewski
C. ANNA ULASZEWSKI
By direction

Distribution:

**Kurt Baer, Southwest Division (6 copies)
Martin Hausladen, USEPA (2 copies)
Alvaro Gutierrez, CALEPA, DTSC (2 copies)
Hugh Marley, RWQCB-LA (1 copy)
Kathy Stevens, BNI (1 copy)
Richard Landgraff, RAB (1 copy)
Roberta L. Johnson, RAB (1 copy)
John Essington, RAB (1 copy)**

Environmental Survey for Disestablishment

of Less Than 90-Day Hazardous Waste Storage Areas

Building Number: 7451 Hazardous Waste Storage Area Number: "7"

A. SITE HISTORY	YES	NO
1. Has an environmental assessment, survey or study ever been completed of this site? If yes provide: a) Date; b) Report name/title (provide copy of report); <u>EBS SITE REPORT</u> c) Name of agency/shop receiving report.	<u>X</u>	
2. Has this site ever been flooded?		<u>MA</u>
3. Has this site ever been damaged by fire, earthquake, etc.?		<u>MA</u>
4. Has disposal or treatment of hazardous wastes ever been performed at this site?		<u>MA</u>
5. Has this site ever been used to store or repair equipment or containers containing polychlorinated biphenyls (PCBs)?		<u>MA</u>
6. Does this site have underground water monitoring well(s) nearby? If yes; check water analyses from wells, and the chemistry of wastes commonly stored/treated at this site.		<u>MA</u>
7. Has this site ever been used for any other hazardous waste activity other than its current use? If yes; specify.		<u>MA</u>
8. Has there been dumping, burying or burning of hazardous material or waste at this site?		<u>MA</u>
9. Has there been bioremediation performed on this site?		<u>MA</u>
10. Has contaminated soil ever been discovered at this site?	<u>X</u>	<u>✓ RM</u>
11. Has an explosion of hazardous material/hazardous wastes ever occurred at this site?		<u>MA</u>
12. Has there been underground hazardous material/waste removed from, left-in-place, or abandoned at this site?		<u>MA</u>
13. Has there been any complaint to a regulatory agency in connection with improper management of hazardous material/waste at this site?		<u>MA</u>
14. Has there been areas at this site used for hazardous material transfer (e.g. tank loading, material drum transfer, etc.)		<u>MA</u>
15. Has there been any lawsuits or administrative proceedings regarding release or threatened release of hazardous substances in the last three years?		<u>MA</u>

EXPLAIN ALL YES ANSWERS ON SEPARATE SHEET.

Completed by (Print Name): MARK ANDERSEN

Signature: Mark Andersen

Date and Time: 4-3-96 14:00

Code: 997 Ext.: 7124

**Environmental Survey for Disestablishment
of Less Than 90-Day Hazardous Waste Storage Areas**

Building Number: 453 Hazardous Waste Storage Area Number: _____

A. SITE HISTORY	YES	NO
1. Has an environmental assessment, survey or study ever been completed of this site? If yes provide: a) Date; b) Report name/title (provide copy of report); <u>EBS SITE REPORT RM</u> c) Name of agency/shop receiving report.	X	N/A
2. Has this site ever been flooded? <u>FOR RINSE IAW PROCEDURE</u>	X	N/A
3. Has this site ever been damaged by fire, earthquake, etc.?		X
4. Has disposal or treatment of hazardous wastes ever been performed at this site?		X
5. Has this site ever been used to store or repair equipment or containers containing polychlorinated biphenyls (PCBs)?		X
6. Does this site have underground water monitoring well(s) nearby? If yes; check water analyses from wells, and the chemistry of wastes commonly stored/treated at this site.	N/A	X / RM
7. Has this site ever been used for any other hazardous wastes activity other than its current use? If yes; specify.		X
8. Has there been dumping, burying or burning of hazardous material or waste at this site?		X
9. Has there been bioremediation performed on this site?		X
10. Has contaminated soil ever been discovered at this site?		X
11. Has an explosion of hazardous material/hazardous wastes ever occurred at this site?		X
12. Has there been underground hazardous material/waste removed from, left-in-place, or abandoned at this site?		X
13. Has there been any complaint to a regulatory agency in connection with improper management of hazardous material/waste at this site?		X / RM
14. Has there been areas at this site used for hazardous material transfer (e.g. tank loading, material drum transfer, etc.)		X / RM
15. Has there been any lawsuits or administrative proceedings regarding release or threatened release of hazardous substances in the last three years?		X / RM

EXPLAIN ALL YES ANSWERS ON SEPARATE SHEET.

Completed by (Print Name): M. MILLER

Signature: [Signature]

Date and Time: 9/26/96

Code: 997 Ext.: 2817

Environmental Survey for Disestablishment
of Less Than 90-Day Hazardous Waste Storage Areas

Building Number: 453 Hazardous Waste Storage Area Number: _____

B. RELEASE INFORMATION	YES	NO
1. Has there been any known releases of hazardous material/waste at this site?		X <i>AW</i>
2. Has there been any suspected releases of hazardous material/waste at this site?		X
3. If there has been any known or suspected releases (previously known, discovered by walk through, recorded, etc.) provide the following information (on separate sheet): a) Type of hazardous material/waste released; b) Amount of the release; c) Area contaminated by the release; d) Remediation of the release; e) Any samples taken of the release; f) Any reporting of the release to a regulatory agency; g) Any compliance order resulting from the release; h) Any environmental reports, studies, and any other exploratory evaluations required as a result of the release.		X <i>N/A</i>
Completed by (Print Name): <u>M. MILLER</u>		
Signature: <u><i>M. Miller</i></u>		
Date and Time: <u>9/26/96 09:51</u>		
Code: <u>997</u> Ext.: <u>2817</u>		

**Environmental Survey for Disestablishment
of Less Than 90-Day Hazardous Waste Storage Areas**

Building Number: 457 Hazardous Waste Storage Area Number: 2

A. SITE HISTORY	YES	NO
1. Has an environmental assessment, survey or study ever been completed of this site? If yes provide: a) Date: <u>EBS SITE_{RM} SURVEY BY C-1170</u> b) Report name/title (provide copy of report): c) Name of agency/shop receiving report.	✓	
2. Has this site ever been flooded? <u>RAIN & DURING RINSE</u>	✓	
3. Has this site ever been damaged by fire, earthquake, etc.?		✓
4. Has disposal or treatment of hazardous wastes ever been performed at this site?		✓
5. Has this site ever been used to store or repair equipment or containers containing polychlorinated biphenyls (PCBs)?		XXXX
6. Does this site have underground water monitoring well(s) nearby? If yes: check water analyses from wells, and the chemistry of wastes commonly stored/treated at this site.		XXXX
7. Has this site ever been used for any other hazardous wastes activity other than its current use? If yes; specify.		XXXX
8. Has there been dumping, burying or burning of hazardous material or waste at this site?		XXXX
9. Has there been bioremediation performed on this site?		XXXX
10. Has contaminated soil ever been discovered at this site?		XXXX
11. Has an explosion of hazardous material/hazardous wastes ever occurred at this site?		XXXX
12. Has there been underground hazardous material/waste removed from, left-in-place, or abandoned at this site?		XXXX
13. Has there been any complaint to a regulatory agency in connection with improper management of hazardous material/waste at this site?		XXXX
14. Has there been areas at this site used for hazardous material transfer (e.g. tank loading, material drum transfer, etc.)	✓ *	
15. Has there been any lawsuits or administrative proceedings regarding release or threatened release of hazardous substances in the last three years?		XXXX

EXPLAIN ALL YES ANSWERS ON SEPARATE SHEET.

Completed by (Print Name): M. MILLER

Signature: [Signature]

Date and Time: 1/7/97 10:30

Code: 997 Ext.: 2817 * PAINT



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

**5090
SER 1170/4874
04 JUN 97**

From: Commander, Long Beach Naval Shipyard

**Subj: FINAL PRELIMINARY ASSESSMENT FOR THE POINTS OF
INTEREST AT LONG BEACH NAVAL SHIPYARD, LOS ANGELES
COUNTY, CALIFORNIA**

**Encl: (1) Changes for Appendices F, G and H - Final Preliminary
Assessment (PA) for the Points of Interest (POIs).**

- 1. The "Environmental Survey for Disestablishment for the Less-than-90 Day Hazardous Waste Storage Areas" forms were incomplete as submitted in Appendices F, G and H of the above referenced document.**
- 2. Please replace with the enclosed completed survey forms.**
- 3. We apologize for any inconvenience that this might have caused you. If you have any questions, please do not hesitate to contact Ray Mills or C. Anna Ulaszewski, Long Beach Naval Shipyard at (562) 980-6888.**

C. Anna Ulaszewski
C. ANNA ULASZEWSKI
By direction

Distribution:

**Kurt Baer, Southwest Division (6 copies)
Martin Hausladen, USEPA (2 copies)
Alvaro Gutierrez, CALEPA, DTSC (2 copies)
Hugh Marley, RWQCB-LA (1 copy)
Kathy Stevens, BNI (1 copy)
Richard Landgraff, RAB (1 copy)
Roberta L. Johnson, RAB (1 copy)
John Essington, RAB (1 copy)**

Environmental Survey for Disestablishment

of Less Than 90-Day Hazardous Waste Storage Areas

Building Number: 8451 Hazardous Waste Storage Area Number: "7"

A. SITE HISTORY	YES	NO
1. Has an environmental assessment, survey or study ever been completed of this site? If yes provide: a) Date; b) Report name/title (provide copy of report); <u>EBS SITE REPORT</u> c) Name of agency/shop receiving report.	<u>✓ RM</u>	
2. Has this site ever been flooded?		<u>MA</u>
3. Has this site ever been damaged by fire, earthquake, etc.?		<u>MA</u>
4. Has disposal or treatment of hazardous wastes ever been performed at this site?		<u>MA</u>
5. Has this site ever been used to store or repair equipment or containers containing polychlorinated biphenyls (PCBs)?		<u>MA</u>
6. Does this site have underground water monitoring well(s) nearby? If yes; check water analyses from wells, and the chemistry of wastes commonly stored/treated at this site.		<u>MA</u>
7. Has this site ever been used for any other hazardous waste activity other than its current use? If yes; specify.		<u>MA</u>
8. Has there been dumping, burying or burning of hazardous material or waste at this site?		<u>MA</u>
9. Has there been bioremediation performed on this site?		<u>MA</u>
10. Has contaminated soil ever been discovered at this site?	<u>✓</u>	<u>✓ RM</u>
11. Has an explosion of hazardous material/hazardous waste ever occurred at this site?		<u>MA</u>
12. Has there been underground hazardous material/waste removed from, left-in-place, or abandoned at this site?		<u>MA</u>
13. Has there been any complaint to a regulatory agency in connection with improper management of hazardous material/waste at this site?		<u>MA</u>
14. Has there been areas at this site used for hazardous material transfer (e.g. tank loading, material drum transfer, etc.)		<u>MA</u>
15. Has there been any lawsuits or administrative proceedings regarding release or threatened release of hazardous substances in the last three years?		<u>MA</u>

EXPLAIN ALL YES ANSWERS ON SEPARATE SHEET.

Completed by (Print Name): MARK ANDERSEN

Signature: Mark Andersen

Date and Time: 4-3-96 14:00

Code: 997 Ext.: 7174

Environmental Survey for Disestablishment
of Less Than 90-Day Hazardous Waste Storage Areas

Building Number: 453 Hazardous Waste Storage Area Number: _____

A. SITE HISTORY	YES	NO
1. Has an environmental assessment, survey or study ever been completed of this site? If yes provide: a) Date; b) Report name/title (provide copy of report): <u>ESS SITE REPORT RM</u> c) Name of agency/shop receiving report.	X	RM
2. Has this site ever been flooded? <u>FOR RINSE IAW PROCEDURE</u>	X	RM
3. Has this site ever been damaged by fire, earthquake, etc.?		X
4. Has disposal or treatment of hazardous wastes ever been performed at this site?		X
5. Has this site ever been used to store or repair equipment or containers containing polychlorinated biphenyls (PCBs)?		X
6. Does this site have underground water monitoring well(s) nearby? If yes; check water analyses from wells, and the chemistry of wastes commonly stored/treated at this site.	RM	X <u>RM</u>
7. Has this site ever been used for any other hazardous wastes activity other than its current use? If yes: specify.		X
8. Has there been dumping, burying or burning of hazardous material or waste at this site?		X
9. Has there been bioremediation performed on this site?		X
10. Has contaminated soil ever been discovered at this site?		X
11. Has an explosion of hazardous material/hazardous wastes ever occurred at this site?		X
12. Has there been underground hazardous material/waste removed from, left-in-place, or abandoned at this site?		X
13. Has there been any complaint to a regulatory agency in connection with improper management of hazardous material/waste at this site?		X <u>RM</u>
14. Has there been areas at this site used for hazardous material transfer (e.g. tank loading, material drum transfer, etc.)		X <u>RM</u>
15. Has there been any lawsuits or administrative proceedings regarding release or threatened release of hazardous substances in the last three years?		X <u>RM</u>

EXPLAIN ALL YES ANSWERS ON SEPARATE SHEET.

Completed by (Print Name): M. MILLER

Signature: [Signature]

Date and Time: 9/26/96

Code: 997 Ext.: 2817

Environmental Survey for Disestablishment
of Less Than 90-Day Hazardous Waste Storage Areas

Building Number: 453 Hazardous Waste Storage Area Number: _____

B. RELEASE INFORMATION	YES	NO
1. Has there been any known releases of hazardous material/waste at this site?		X <i>Y</i>
2. Has there been any suspected releases of hazardous material/waste at this site?		X
3. If there has been any known or suspected releases (previously known, discovered by walk through, recorded, etc.) provide the following information (on separate sheet): a) Type of hazardous material/waste released; b) Amount of the release; c) Area contaminated by the release; d) Remediation of the release; e) Any samples taken of the release; f) Any reporting of the release to a regulatory agency; g) Any compliance order resulting from the release; h) Any environmental reports, studies, and any other exploratory evaluations required as a result of the release.		X <i>N/A</i>

Completed by (Print Name): M. MILLER

Signature: *M. Miller*

Date and Time: 9/26/96 09:51

Code: 997 Ext.: 2817

Environmental Survey for Disestablishment
of Less Than 90-Day Hazardous Waste Storage Areas

Building Number: 457 Hazardous Waste Storage Area Number: 2

A. SITE HISTORY	YES	NO
1. Has an environmental assessment, survey or study ever been completed of this site? If yes provide: a) Date: <u>EBS SITE ^{RM} SURVEY BY C-1170</u> b) Report name/title (provide copy of report): c) Name of agency/shop receiving report.	✓	
2. Has this site ever been flooded? <u>RAIN & DURING RINSE</u>	✓	
3. Has this site ever been damaged by fire, earthquake, etc.?		✓
4. Has disposal or treatment of hazardous wastes ever been performed at this site?		✓
5. Has this site ever been used to store or repair equipment or containers containing polychlorinated biphenyls (PCBs)?		XXXX
6. Does this site have underground water monitoring well(s) nearby? If yes: check water analyses from wells, and the chemistry of wastes commonly stored/treated at this site.		XXXX
7. Has this site ever been used for any other hazardous wastes activity other than its current use? If yes: specify.		XXXX
8. Has there been dumping, burying or burning of hazardous material or waste at this site?		XXXX
9. Has there been bioremediation performed on this site?		XXXX
10. Has contaminated soil ever been discovered at this site?		XXXX
11. Has an explosion of hazardous material/hazardous wastes ever occurred at this site?		XXXX
12. Has there been underground hazardous material/waste removed from, left-in-place, or abandoned at this site?		XXXX
13. Has there been any complaint to a regulatory agency in connection with improper management of hazardous material/waste at this site?		XXXX
14. Has there been areas at this site used for hazardous material transfer (e.g. tank loading, material drum transfer, etc.)	✓ *	
15. Has there been any lawsuits or administrative proceedings regarding release or threatened release of hazardous substances in the last three years?		XXXX

EXPLAIN ALL YES ANSWERS ON SEPARATE SHEET.

Completed by (Print Name): M. MILLER

Signature: [Signature]

Date and Time: 1/7/97 10:30

Code: 997 Ext.: 2817 * PAINT



BECHTEL NATIONAL INC.

CLEAN II TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N-68711-92-D-4670

Document Control No. CTO-0123/0057

File Code: 0208

TO: Commanding Officer
Naval Facilities Engineering Command
Southwest Division
Mr. Richard Selby, Code 57CS.RS
Building 127, Room 112
1220 Pacific Highway
San Diego, CA. 92132-5187

DATE: 04 June 1997

CTO #: 0123

LOCATION: Long Beach Naval Shipyard

FROM: *Engr Kapur*

Program / Project Manager

Operations Manager

DESCRIPTION: Contact Report dated 28 May 1997

Groundwater Investigation Work Plan for Long Beach Naval Shipyard

IRP Sites 9, 12, and 13

TYPE: Contract Deliverable _____ CTO Deliverable _____ Other: X
(Cost) (Technical)

VERSION: N/A REVISION No: N/A
(e.g., Draft, Draft Final, Final, etc.)

ADMIN RECORD: Yes ☒ No ☐ U.S. EPA Category _____ Confidential _____
(PM to Identify)

SCHEDULED DELIVERY DATE: 6/4/97 ACTUAL DELIVERY DATE: _____

NUMBER OF COPIES SUBMITTED: 10/4C/3E

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K. Kapur (1c/1e)

E. Morelan (1c/1e)

CTO File (1c/1e)

PMO File (1c/1e)

C. Phillips - AR (2c/2e)

S. Draper (1c/1e)

M. Hausladen, USEPA (1c/1e)

A. Gutierrez, CALEPA (1c/1e)

H. Marley, RWQCB-LA (1c/1e)

K. Brasaemle, Weston (1c/1e)

Date/Time Received

CONTACT REPORT

Job No.: 22214-0123	Date of Contact: 05/28/97	Type of Contact:	Phone Call <u> X </u> Bechtel Off <u> </u> Client Office <u> </u> Jobsite <u> </u> Other <u> </u>																		
Company: Southwest Division - Naval Facilities Engineering Command (SWDIV)		Contact Name & Title: Kim Ostrowski - RPM (619) 532-2004, Ext. 15	Bechtel Name & Title: Edward Morelan - CTOL (562) 807-2213																		
Purpose of Contact: Kim Ostrowski contacted me to provide direction on the handling of agency comments received verbally or by fax, and to advise on the status of U.S. EPA's review of the responses to comments on the Long Beach Naval Shipyard Groundwater Investigation Work Plan for IRP Sites 9, 12 and 13. The responses to comments were transmitted by facimile to the agencies on 05/16/97 for their review and concurrence, and by mail on 05/19/97 (Ref. Bechtel Chron: CTO-0123/0045).																					
Results: On 05/28/97, Kim informed me that she had received verbal concurrence from U.S. EPA with the responses to comments on the Groundwater Investigation Work Plan for IRP Sites 9, 12, and 13. Kim has requested that U.S. EPA send all correspondence officially on EPA letterhead to fulfill Administrative Record requirements. To facilitate timely completion of the review process and issuance of the Final Work Plan, Kim directed me to continue to incorporate verbal and faxed comments, and to follow up by documenting phone conversations or submitting the fax into the Administrative Record.																					
<div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="width: 45%;"> <u>SEE ATTACHED</u> Martin Hausladen, U.S. EPA </div> <div style="width: 45%; text-align: center;"> Date </div> </div>																					
Future Action to be Taken: Upon concurrence from all agencies on responses to comments, BNI to upgrade Groundwater Investigation Work Plan to Final status.																					
Prepared By: E. A. Morelan		Location: Norwalk	Date: 05/29/97																		
Distribution:	Route	Copy	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Originator(s)</td> <td style="width: 10%;">Route</td> <td style="width: 50%;">Copy</td> </tr> <tr> <td>J. Moe</td> <td style="text-align: center;">—</td> <td style="text-align: center;"><u> X </u></td> </tr> <tr> <td>J. Kluesener</td> <td style="text-align: center;">—</td> <td style="text-align: center;"><u> X </u></td> </tr> <tr> <td>J. Howe</td> <td style="text-align: center;">—</td> <td style="text-align: center;"><u> X </u></td> </tr> <tr> <td>N. Thomas</td> <td style="text-align: center;">—</td> <td style="text-align: center;"><u> X </u></td> </tr> <tr> <td>K. Kapur</td> <td style="text-align: center;">—</td> <td style="text-align: center;"><u> X </u></td> </tr> </table>	Originator(s)	Route	Copy	J. Moe	—	<u> X </u>	J. Kluesener	—	<u> X </u>	J. Howe	—	<u> X </u>	N. Thomas	—	<u> X </u>	K. Kapur	—	<u> X </u>
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K. Kapur	—	<u> X </u>																			

CONTACT REPORT

Job No.: 22214-0123	Date of Contact: 05/28/97	Type of Contact	Phone Call Bechtel Off Client Office Jobsite Other	<u>X</u> _____ _____ _____ _____
Company: Southwest Division - Naval Facilities Engineering Command (SWDN)		Contact Name & Title: Kim Ostrowski - RPM (619) 532-2004, Ext. 15	Bechtel Name & Title: Edward Morelan - CTOL (562) 807-2213	
<p>Purpose of Contact: Kim Ostrowski contacted me to provide direction on the handling of agency comments received verbally or by fax, and to advise on the status of U.S. EPA's review of the responses to comments on the Long Beach Naval Shipyard Groundwater Investigation Work Plan for IRP Sites 9, 12 and 13. The responses to comments were transmitted by facsimile to the agency on 05/16/97 for their review and concurrence, and by mail on 05/19/97 (Ref. Bechtel Chron: CTO-0123/0045).</p>				
<p>Results: On 05/28/97, Kim informed me that she had received verbal concurrence from U.S. EPA with the responses to comments on the Groundwater Investigation Work Plan for IRP Sites 9, 12, and 13. Kim has requested that U.S. EPA send all correspondence officially on EPA letterhead to fulfill Administrative Record requirements. To facilitate timely completion of the review process and issuance of the Final Work Plan, Kim directed me to continue to incorporate verbal and faxed comments, and to follow up by documenting phone conversations or submitting the fax into the Administrative Record.</p>				
<p><i>Martin Hausladen</i> Martin Hausladen, U.S. EPA <i>RPM</i></p> <p><i>3 June '97</i> Date</p>				
<p>Future Action to be Taken: Upon concurrence from all agencies on responses to comments, BNI to upgrade Groundwater Investigation Work Plan to Final status.</p>				
Prepared By: E. A. Morelan		Location: Norwalk	Date: 05/29/97	
Distribution:	Route	Copy	Originator(s)	Route
J. Moe	—	—	—	—
J. Kluesener	—	<u>X</u>	Others:	—
J. Howe	—	—	File:	<u>X</u>
N. Thomas	—	—	SW/DIV	<u>X</u>
K. Kapur	—	<u>X</u>		

L:\CTO123\CONTACTS\CON0008.DOC

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX (213) 266-7600



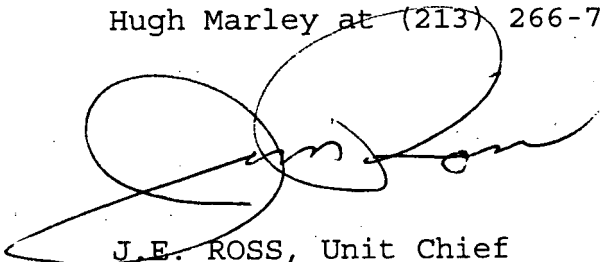
June 12, 1997

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

**RESPONSE TO COMMENTS ON THE QUARTERLY GROUNDWATER MONITORING
REPORT, FIRST QUARTER 1997- NEX GAS STATION - LONG BEACH NAVAL
SHIPYARD, LONG BEACH, CALIFORNIA, (File No. 90-76)**

The Los Angeles Regional Water Quality Control Board has received and reviewed the Navy's response to agency comments on the Quarterly Groundwater Monitoring Report, First Quarter, 1997, for the NEX Gas Station, at the Long Beach Naval Shipyard. Staff also discussed our comments with the navy during a comment resolution meeting held on June 11, 1997. Our comments on the above referenced report have been appropriately addressed. Also, we have no objection to both the Navy's proposed enhancements to the Air-Sparge/SVE system, and the exclusion of groundwater monitoring wells MW-16, MW-17, MW-18, TH-2, and AS-1 from the groundwater monitoring program.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



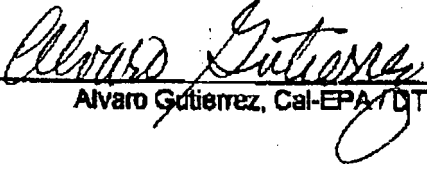
J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Gutterez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency

CONTACT REPORT

Job No.: 22214-0123	Date of Contact: 06/12/97	Type of Contact:	Phone Call <u>X</u> Bechtel Off <u>—</u> Client Office <u>—</u> Jobsite <u>—</u> Other <u>—</u>
Company: Southwest Division - Naval Facilities Engineering Command (SWDIV)		Contact Name & Title: Kim Ostrowski - RPM (619) 532-2004, Ext. 15	Bechtel Name & Title: Edward Morelan - CTOL (562) 807-2213
Purpose of Contact: Kim Ostrowski contacted me to provide direction on the handling of agency comments received verbally or by fax on the Long Beach Naval Shipyard Groundwater Investigation Work Plan for IRP Sites 9, 12 and 13. The responses to comments were transmitted by facimile to the agencies on 05/16/97 for their review and concurrence, and by mail on 05/19/97 (Ref. Bechtel Chron: CTO-0123/0045).			
Results: On 06/16/97, I received verbal confirmation from Alvaro Gutierrez of the Cal-EPA / DTSC that his agency did not have comments on the Draft Groundwater Investigation Work Plan for IRP Sites 9, 12, and 13 (Kim had previously requested that regulatory agencies send all correspondence officially on their letterhead to fulfill Administrative Record requirements). Alvaro said that outstanding issues regarding the Work Plan have been resolved, as long as the comments from the LARWQB had been resolved; I informed him that the LARWQCB issues had been resolved. To facilitate timely completion of the review process and issuance of the Final Work Plan, Kim directed me to continue to incorporate verbal and faxed comments, and to follow up by documenting phone conversations or submitting the fax into the Administrative Record. The Final Work Plan will be issued, and the field activities will be initiated based on these documented conversations.			
_____ -SEE ATTACHED- Alvaro Gutierrez, Cal-EPA / DTSC			
_____ Date			
Future Action to be Taken: Upon concurrence from all agencies on responses to comments, BNI to upgrade Groundwater Investigation Work Plan to Final status.			
Prepared By: E. A. Morelan		Location: Norwalk	Date: 06/17/97
Distribution:	Route	Copy	Originator(s)
J. Moe	—	—	—
J. Kluesener	—	<u>X</u>	Others: <u>X</u>
J. Howe	—	—	File: <u>X</u>
N. Thomas	—	—	SWDIV <u>X</u>
K. Kapur	—	<u>X</u>	

CONTACT REPORT

Job No.: 22214-0123	Date of Contact: 06/12/97	Type of Contact:	Phone Call <u>X</u> Bechtel Off <u>—</u> Client Office <u>—</u> Jobsite <u>—</u> Other <u>—</u>		
Company: Southwest Division - Naval Facilities Engineering Command (SWDM)	Contact Name & Title: Kim Ostrowski - RPM (619) 532-2004, Ext. 15	Bechtel Name & Title: Edward Morelan - CTOL (562) 807-2213			
Purpose of Contact: Kim Ostrowski contacted me to provide direction on the handling of agency comments received verbally or by fax on the Long Beach Naval Shipyard Groundwater Investigation Work Plan for IRP Sites 9, 12 and 13. The responses to comments were transmitted by facimile to the agencies on 05/16/97 for their review and concurrence, and by mail on 05/19/97 (Ref. Bechtel Chron: CTO-0123/0045). <div style="text-align: right;"><i>TO: ED MORELAN</i> <i>562-807-2398</i> <i>FROM: Alvaro</i> <i>Gutierrez</i> <i>562-590-5565</i></div>					
Results: On 06/16/97, I received verbal confirmation from Alvaro Gutierrez of the Cal-EPA / DTSC that his agency did not have comments on the Draft Groundwater Investigation Work Plan for IRP Sites 9, 12, and 13 (Kim had previously requested that regulatory agencies send all correspondence officially on their letterhead to fulfill Administrative Record requirements). Alvaro said that outstanding issues regarding the Work Plan have been resolved, as long as the comments from the LARWQCB had been resolved; I informed him that the LARWQCB issues had been resolved. To facilitate timely completion of the review process and issuance of the Final Work Plan, Kim directed me to continue to incorporate verbal and faxed comments, and to follow up by documenting phone conversations or submitting the fax into the Administrative Record. The Final Work Plan will be issued, and the field activities will be initiated based on these documented conversations. <div style="display: flex; justify-content: space-between; align-items: center;"><div> Alvaro Gutierrez, Cal-EPA / DTSC</div><div><i>6/16/97</i> Date</div></div>					
Future Action to be Taken: Upon concurrence from all agencies on responses to comments, BNI to upgrade Groundwater Investigation Work Plan to Final status.					
Prepared By: E. A. Morelan		Location: Norwalk	Date: 06/17/97		
Distribution:	Route	Copy	Originator(s)	Route	Copy
J. Moe	—	—	Others:	—	<u>X</u>
J. Kuesener	—	<u>X</u>	File:	—	<u>X</u>
J. Howe	—	—	SWDIV	—	<u>X</u>
N. Thomas	—	—			<u>X</u>
K. Kapur	—	<u>X</u>			



DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE PROGRAM OFFICE
SOUTHWEST DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
1420 KETTNER BOULEVARD, SUITE 507
SAN DIEGO, CALIFORNIA 92101-2404

5090
Ser 56LB.GS/0749
June 18, 1997

Ms. Karla Brasaenle
Roy F. Weston, Inc.
1 Concord Centre, Suite 1580
2300 Clayton Road
Concord, CA 94520-2148

1. Enclosed is a copy of the Draft Remediation Closure Report for Building 128 UST Site at Long Beach Naval Shipyard, Long Beach, California dated May 30, 1997, for your review. Request that written comments be provided by July 14 1997 to:

Commander
Southwest Division, Naval Facilities Engineering Command
Attn: Gary Simon (Code 56LB.GS)
1220 Pacific Highway
San Diego, CA 92132-5190

2. For questions or concerns regarding this matter, please contact the undersigned at (619) 532-2004 extension 20.

Sincerely,

GARY SIMON
Remedial Project Manager
By direction of the Commander

Encl:

- (1) Draft Remediation Closure Report for Building 128 UST Site at Naval Shipyard Long Beach, Long Beach, California dated May 30, 1997 Volume I
- (2) Draft Remediation Closure Report for Building 128 UST Site at Naval Shipyard Long Beach, Long Beach, California dated May 30, 1997 Volume II-V, (Technical Backup Data)

5090
Ser 56LB.GS/0749
June 18, 1997

Distribution:

Mr. Alvaro Gutierrez (1 copies encl (1) only)
California Environmental Protection Agency
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444

Mr. Martin Hausladen (1 copy encl (1) only)
U. S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Mr. Hugh Marley, (1 copy encl (1) only)
California Environment Protection Agency
Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey, CA 91754-2156

Commander
Long Beach Naval Shipyard
Attn. Ms Anna Ulaszewski (Code 1170), (1 copy encl (1) only)
300 Skipjack Road
Long Beach, CA 90822-5099

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

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MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX (213) 266-7600



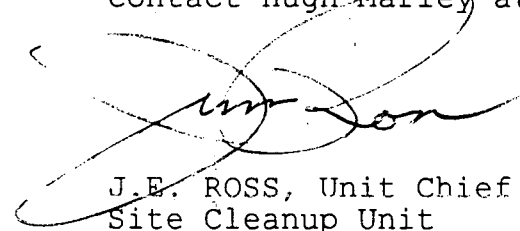
June 18, 1997

Ms. Kim Ostrowski
Commander
Code 56LB.KO
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

**RESPONSE TO COMMENTS - DRAFT GROUNDWATER INVESTIGATION WORKPLAN FOR
IRP SITES 9, 12, AND 13 AT THE LONG BEACH NAVAL SHIPYARD, LONG
BEACH, CALIFORNIA (FILE NO. 90-75)**

We have received and reviewed the Navy's Response to agency comments on the Draft Groundwater Investigation Workplan for IRP Sites 9, 12, and 13, at the Long Beach Naval Shipyard, dated June 12, 1997. Staff also discussed the Navy's responses with the Navy and their contractors on June 10, and June 12, 1997. Our comments on the draft document have been appropriately addressed. We have no objection to the workplan being implemented at this time.

If you have any questions or comments regarding the above, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Faiq Aljabi, Navy Southwest Division, San Diego
Alvaro Gutterez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego
Ms. Anna Ulaszewski, Long Beach Naval Shipyard



Cal/EPA

June 20, 1997

Department of
Toxic Substances
Control

Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

245 West Broadway,
Suite 425
Long Beach, CA
90802-4444

Mr. Kurt Baer
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Room 18
San Diego, California 92132-5191

**FINAL PRELIMINARY ASSESSMENT (PA) FOR THE POINT OF INTEREST
(POI) AT LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA**

Dear Mr. Baer:

The California Department of Toxic Substances Control (DTSC) has completed its review of the *Final PA for the POI (Final PA) at Long Beach Naval Shipyard, Long Beach, California*, dated April 1997. The Final PA was prepared by Long Beach Naval Shipyard (LBNSY) Environmental Division, Code 1170 for Southwest Division Naval Facilities Engineering Command.

The Final PA only presents 122 out of the 304 POIs that were identified at Long Beach Naval Shipyard. These 122 POIs were determined by the Navy, to be likely candidates for "no further action" based on visual inspection, documentation review, and interviews. DTSC and the Regional Water Quality Control Board - Los Angeles are satisfied with the information submitted with the Final PA and concur with the selected POIs for no further action. As a result, the DTSC hereby concurs with this Final PA.

If you have any questions, please contact Mr. Alvaro Gutierrez at (562) 590-5565.

Sincerely,

John E. Scandura, Chief
Southern California Operations
Office of Military Facilities

cc: See next page



Printed on Recycled Paper

Mr. Kurt Baer
June 20, 1997
Page 2

cc: Mr. Albert Arellano Jr., P.E.
Unit Chief
Base Closure Unit
Long Beach Office (R4-4)

Ms. Sharon Lemieux
Base Closure Unit
Long Beach Office (R4-4)

Ms. Jennifer Rich
Public Participation Specialist
Long Beach Office (R4-4)

Mr. J. E. Ross
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Mr. Martin Hausladen
Remedial Project Manager
Hazardous Waste Management Division (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

Ms. Anna Ulawzeski
Base Environmental Coordinator
Long Beach Naval Shipyard
300 Skipjack Rd.
Long Beach, California 90822-5099

CONTACT REPORT

Job No.: 22214-0123	Date of Contact: 06/25/97	Type of Contact:	Phone Call <u>X</u> Bechtel Off — Client Office — Jobsite — Other —
Company: Southwest Division - Naval Facilities Engineering Command (SWDIV)		Contact Name & Title: Kim Ostrowski - RPM (619) 532-2004, Ext. 15 Hugh Marley - LARWQCB	Bechtel Name & Title: Edward Morelan - CTOL (562) 807-2213
Purpose of Contact: Kim Ostrowski and I contacted Hugh Marley to discuss specific issues regarding the installation of the groundwater monitoring wells within the lower coarse-grained water-bearing zone in the vicinity of IRP Site 9 on the Long Beach Naval Shipyard. The issues discussed included the addition of water during monitoring-well construction to counteract heaving sands; and soil sampling at 10-foot intervals during the construction of the monitoring wells within the lower interval.			
Results: Hugh agreed that water could be added to the borehole during monitoring-well construction, as long as the water was potable (e.g., not reclaimed water). I said that the added water would be potable. I also mentioned that a source-water blank sample would be collected for the added water. Regarding the sampling of soils every 10 feet during well construction: I said that at each location where a deep monitoring well is to be installed, a continuous-core soil boring and/or a CPT location would be in the immediate vicinity of the well location. Hugh commented that this procedure would be acceptable, as long as major changes in lithology at each well location would be sampled as part of this strategy.			
Future Action to be Taken: Proceed with the installation of monitoring wells within the lower interval, and counteract, as needed and described above, the effects of heaving sands. Sample lithologies within the monitoring-well boreholes every 10 feet, and at major changes in lithology based on nearby CPT and/or continuous-core sampling information.			
Prepared By: E. A. Morelan		Location: Norwalk	Date: 06/25/97
Distribution:	Route	Copy	Originator(s) Route Copy
J. Moe	—	—	— <u>X</u>
J. Kluesener	—	—	Others: <u>X</u>
J. Howe	—	—	File:
N. Thomas	—	—	SWDIV <u>X</u>
K. Kapur	—	<u>X</u>	



DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE PROGRAM OFFICE
SOUTHWEST DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
1420 KETTNER BOULEVARD, SUITE 507
SAN DIEGO, CALIFORNIA 92101-2404

5090
Ser 56LB.JH/0791
July 15, 1997

Ms. Judith Winchell
Base Closure Specialist
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street (H-9-2)
San Francisco, CA 94105-3901

Dear Ms. Winchell:

This letter is a request to the United States Environmental Protection Agency (U.S. EPA) to review enclosure (1), the Draft Finding of Suitability to Lease Building 300 at the Long Beach Naval Shipyard, Long Beach, California in accordance with the *Standard Procedures for Consultation on FOST/FOSLs - To be Used at Closing Navy Facilities in California*.

The Navy would greatly appreciate a 15-day review of this document based upon the date this letter is received by your office.

Should you have any questions or concerns, please contact the undersigned at (619) 532-2004, extension 22.

Sincerely,

A handwritten signature in black ink, appearing to read "John Hill", is written over the typed name "JOHN HILL".

JOHN HILL
Assistant Base Closure Manager
By direction of the Commander

Encl:

- (1) Draft Finding of Suitability to Lease Building 300 at the Long Beach Naval Shipyard, Long Beach, California - [2 Copies]

5090
Ser 56LB.JH/0791
July 15, 1997

Copy to: (w/o encl)
Mr. Martin Hausladen
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street (H-9-2)
San Francisco, CA 94105-3901

Mr. Alvaro Gutierrez
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, CA 90802-4444

Ms. Sharon Lemieux
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, CA 90802-4444

Mr. Hugh Marley
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754

State of California
Environmental Protection Agency
M e m o r a n d u m

To: Alvaro Guitterez
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444

Date: July 29, 1997
File: 90-75

From: **CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD-LOS ANGELES REGION**
101 Centre Plaza Drive, Monterey Park, CA 91754-2156
Telephone: (213) 266-7500

Subject: **DRAFT REMEDIATION CLOSURE REPORT FOR BUILDING 128 UST SITE
AT THE LONG BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA (FILE NO.
90-75)**

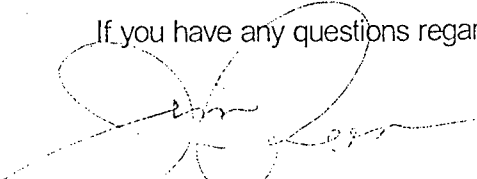
We have received and reviewed the Navy's Draft Remediation Closure Report for Building 128 UST Site at the Long Beach Naval Shipyard, dated June 18, 1997. Our comments are as follows:

The confirmational sampling results presented on page ES-3 and ES-4, indicate that contamination at concentrations greater than the established soil screening criteria (Industrial PRGs) remain in place at the site. Based on the above, the soil remediation cannot be considered complete at this time. All soil with contamination present at levels greater than established screening criteria must be addressed.

Include soil and groundwater isoconcentration maps for the chemicals of concern. Extend the contours to include, at a minimum the established screening criteria concentrations.

The draft report states the Navy plans to defer the groundwater portion of this investigation to the ongoing IR Site 9 investigation. We concur with above referenced plan to separate the soil and groundwater portions of this investigation. However, the Navy should confirm and coordinate the above proposal with the IR Site 9 PMs. Contact with Navy PMs and consultants for IR Site 9 indicate that any Building 128 UST groundwater investigation related data obtained from the IR Site 9 investigation will be incidental, at best. Should the Building 128 UST Site groundwater investigation not be specifically made a part of the IR Site 9 groundwater investigation, we will require that a workplan addressing the groundwater investigation be submitted for agency approval. The workplan should delineate the horizontal and vertical extent of the groundwater contamination and also address groundwater contamination sources left in place below the vadose zone.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

5090
SER 1170/237
August 4, 1997

California Environmental Protection Agency
Department of Toxic Substances Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444
Attn: Alvaro Gutierrez

Dear Mr. Gutierrez:

Enclosed please find two (2) copies of the Draft Addendum to Final Groundwater Investigation Work Plan for Installation Restoration Sites 9, 12 and 13 at the Long Beach Naval Shipyard (Technical Memorandum No. 1) for your review and distribution. Please note that we are currently performing field work, and we need to have agency review completed by August 6, 1997.

For questions or concerns regarding this document, please contact Ms. Kimberly Ostrowski, Southwest Division, Naval Facilities Engineering Command at (619) 532-2004, extension 15, or Edward Morelan of Bechtel National, Inc., at (562) 807-2213.

Sincerely,

A handwritten signature in cursive script that reads "C. Anna Ulaszewski".

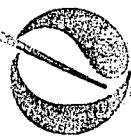
C. Anna Ulaszewski
BRAC Environmental Coordinator
By direction of the Shipyard Commander

Enclosure:

(1) Draft Addendum to Final Groundwater Investigation Work Plan for Installation Restoration Sites 9, 12 and 13, Long Beach Naval Shipyard, Long Beach, California (Technical Memorandum No. 1)

Additional Distribution:

Richard Selby, Southwest Division (1 copy)
John Rogers, Southwest Division (1 copy)
Kimberly Ostrowski, Southwest Division (1 copy)
Anna Ulaszewski, LBNSY (1 copy)
Paul Maize, ROICC (1 copy)
Martin Hausladen, U.S.EPA (1 copy)
Hugh Marley, Cal EPA, LARWQCB (1 copy)
Karla Brasaemle, U.S. EPA / Weston (1 copy)



August 7, 1997

Cal/EPA

Department of
Toxic Substances
Control

245 West Broadway,
Suite 350
Long Beach, CA
90802-4444

Mr. Kurt Baer
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Room 18
San Diego, California 92132-5181

Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection

**FINAL REMEDIAL INVESTIGATION (RI) REPORT FOR INSTALLATION
RESTORATION PROGRAM SITES 8 THROUGH 13, LONG BEACH NAVAL
SHIPYARD, LONG BEACH, CALIFORNIA**

Dear Mr. Baer:

The Department of Toxic Substances Control (DTSC) has completed its review of the *Final Remedial Investigation (RI) Report for Installation Restoration Program Sites 8 through 13 at Long Beach Naval Shipyard, Long Beach, California*, dated June 1997. The Final RI was prepared by Bechtel National, Inc.

The *Final RI* report addresses Operable Units (OU) 4 and 5 at the Long Beach Naval Shipyard. DTSC and the Regional Water Quality Control Board - Los Angeles are satisfied with the responses and incorporation of comments in the *Final RI* report. Based on the recommendation made in the *Final RI* report, additional groundwater investigation is to be conducted at sites 9, 12 and 13. This additional groundwater investigation will be submitted as an amendment to the *Final RI* report. Therefore, the California Environmental Protection Agency will not concur with the *Final RI* report until the additional groundwater data is in final form.

If you have any questions, please contact me at (562) 590-5565.

Sincerely,

Alvaro Gutierrez
Hazardous Substance Engineer
Southern California Operations
Office of Military Facilities

cc: next page

Ms. Kurt Baer
August 7, 1997
Page 2

cc: Mr. Albert Arellano Jr., P.E. (R4-4)
Unit Chief
Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Ms. Sharon Lemieux (R4-4)
Region 4 Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Ms. Jennifer Rich (R4-4)
Public Participation Specialist
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. J. E. Ross
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Mr. Martin Hausladen
Remedial Project Manager
Hazardous Waste Management Division (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

Ms. Anna Ulawzeski
Base Environmental Coordinator
Long Beach Naval Shipyard
300 Skipjack Rd.
Long Beach, California 90822-5099



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 7, 1997

Mr. Kurt Baer
Project Manager
Southwest Division
Code 1832.KB
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5183

Subject: Approval of Long Beach Naval Shipyard RI, Long Beach,
California

Dear Mr. Baer:

The United States Environmental Protection Agency (USEPA) has reviewed the above referenced document. We wish to thank you for the opportunity to perform the review and find that the document adequately address our concerns. We understand that IR Sites 9, 12, and 13 will undergo further investigation in the fiscal year.

If you have questions regarding this letter or I can be of further assistance in any matter concerning the work at the Shipyard, feel free to contact me at anytime at (415) 744-2388.

Sincerely,

Martin M. Hausladen,
Remedial Project Manager



DEPARTMENT OF THE NAVY

LONG BEACH NAVAL SHIPYARD
300 SKIPJACK RD
LONG BEACH, CALIFORNIA 90822-5099

IN REPLY REFER TO:

5090

Ser 1170/266

28 August 97

U. S. Environmental Protection Agency
75 Hawthorne Street, H-9-2
San Francisco, Ca. 94105
Attn: Martin Hausladen, (UST remediation)

Dear Mr. Hausladen:

This is to inform you that Long Beach Naval Shipyard will be closing on 30 September 1997. Contracts are being awarded for any remaining underground storage tanks to be removed in fiscal year 1998.

Once the shipyard has closed, the caretaker function will be absorbed by the Caretaker Site Office, Long Beach Naval Complex, 821 Reeves avenue, Terminal Island, Ca. 90731. You may contact that office at (310)732-6131 if you have any questions.

It has been a pleasure working with the California Regional Water Quality Control Board.

Sincerely,

A handwritten signature in cursive script, reading "T. J. Wheeler", is written over a horizontal line.

T. J. Wheeler
Occupational Safety Health and
Environmental Officer
By direction of the Shipyard Commander



Cal/EPA

Department of
Toxic Substances
Control

245 West Broadway,
Suite 425
Long Beach, CA
90802-4444

September 3, 1997

Mr. Gary Simon
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway, Room 18
San Diego, California 92132-5181

**DRAFT REMEDIATION CLOSURE REPORT FOR BUILDING 128
UNDERGROUND STORAGE TANK (UST) SITE AT LONG BEACH
NAVAL SHIPYARD, LONG BEACH, CALIFORNIA**

Dear Mr. Simon:

The Department of Toxic Substances Control (DTSC) has completed its review of the *Draft Remediation Closure Report for Building 128 UST Site (Draft Closure Report)* at Long Beach Naval Shipyard, Long Beach, California, dated June 18, 1997. The *Draft Closure Report* was prepared by OHM Remediation Services Corp.

The *Draft Closure Report* addresses the removal of two USTs containing polychlorinated biphenyls (PCB) and polynuclear aromatic hydrocarbons (PAH), associated underground pump vault, and remediation of impacted soil at the site. Based on the confirmational sampling results presented in the *Draft Closure Report*, remediation of the impacted soil was not achieved because contaminated soil was left in place at concentrations greater than the established soil screening criteria (Industrial Preliminary Remediation Goals). Therefore, DTSC and the Regional Water Quality Control Board - Los Angeles (RWQCB-LA) request that a meeting be arranged to discuss what action the Navy plans to take regarding the contaminated soil at the site.

DTSC's concerns are addressed by the RWQCB-LA comments which are enclosed with this letter.



Pete Wilson
Governor

James M. Strock
Secretary for
Environmental
Protection



Mr. Gary Simon
September 3, 1997
Page 2

If you have any questions, please contact me at (562) 590-5565.

Sincerely,



Alvaro Gutierrez
Hazardous Substance Engineer
Southern California Operations
Office of Military Facilities

Enclosure

cc: Mr. Albert Arellano Jr., P.E. (R4-4)
Unit Chief
Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. Aaron Yue (R4-4)
Region 4 Base Closure Unit
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

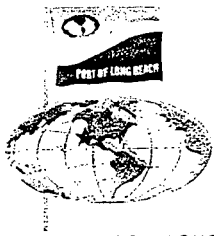
Ms. Jennifer Rich (R4-4)
Public Participation Specialist
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, California 90802-4444

Mr. J. E. Ross
California Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, California 91754-2156

Mr. Gary Simon
September 3, 1997
Page 3

cc: Mr. Martin Hausladen
Remedial Project Manager
Hazardous Waste Management Division (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

Ms. Anna Ulawzeski
Base Environmental Coordinator
Long Beach Naval Shipyard
300 Skipjack Rd.
Long Beach, California 90822-5099



The Port of Long Beach

P. O. BOX 570 • LONG BEACH, CA 90801-0570 • TELEPHONE (562) 437-0041 • FAX (562) 437-3231

September 25, 1997

Ms. Kimberly Kesler
Long Beach BRAC Program Manager
NAVFACENGCOM, Southwest Division
1420 Kettner Boulevard
Suite 501
San Diego, CA 92101-2404

Dear Kimberly:

During the last Oversight Committee Meeting for the Long Beach Naval Complex in Washington, completion of the Preliminary Assessment (PA) for the 182 Group B Points of Interest (POI) was identified as having the potential to delay transfer of the Shipyard property. The Port was requested to work with the Navy to try to identify ways to minimize this potential impact.

I understand that the contract for a Preliminary Assessment (PA) of the 182 Group B POIs is scheduled to be awarded under one of your existing Indefinite Quantity contracts using next fiscal year's funding and that the timeline for completing the PA is about 12 months. Assuming that funding becomes available in mid-November, we would not have a document to discuss category changes with the regulators until late 1998 or early 1999. This timing could have serious impacts to the potential reuse of the Shipyard property.

Working with your staff, we have identified 25 of the POIs that, if fast tracked, could make critical areas of the Shipyard property available sooner. By accelerating the resolution of this smaller subset of less than 15% of the POIs, nearly 70% of the property could be available for early reuse. Those POIs are identified in the attachment. Additionally, several underground storage tanks are identified that are not POIs but that will require clean closure.

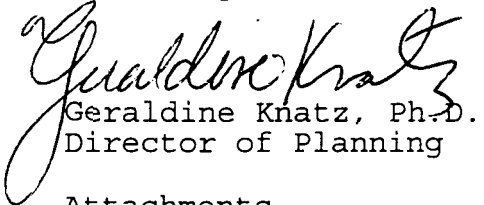
If there were a way to start the PAs for the subset of POIs sooner than November and/or to accelerate the completion of the PAs, we could address the reuse of the property sooner. Additionally, I understand that ground water sampling may also be required by the regulators. We need to explore how this can be done most expeditiously.



Ms. Kimberly Kesler
Page 2
September 25, 1997

A map designating the areas we are requesting to be accelerated is attached. If we can be of assistance in this effort, please feel free to call me.

Sincerely,


Geraldine Knatz, Ph.D.
Director of Planning

Attachments

**Selected Group B Points of Interest
Long Beach Naval Shipyard**

11 Satellite Accumulation Points (3 Locations)

- SAP 3 Building 9 Various Locations, 1st Fl Waste Oil
- SAP 4 Building 9 Various Locations, 1st Fl Waste Paint
- SAP 5 Building 9 Various Locations, 1st Fl Waste Adhesive
- SAP 6 Building 9 Various Locations, 1st Fl Waste Aerosol Solvent
- SAP 7 Building 9 Various Locations, 1st Fl Waste Batteries

- SAP 24 Building 91 1st Floor Waste Oil

- SAP 148 Building A Finger Piers, 1st Fl Spill Pads
- SAP 149 Building A Finger Piers, 1st Fl Lube Oil
- SAP 150 Building A Finger Piers, 1st Fl Oil Filters & Waste
- SAP 151 Building A Finger Piers, 1st Fl Paint Waste
- SAP 152 Building A Finger Piers, 1st Fl Paint Waste
(Same description as SAP 151)

3 Dry Dock Tunnels

- SWS 3 Dry Dock #1 Tunnel
- SWS 4 Dry Dock #2 Tunnel
- SWS 5 Dry Dock #3 Tunnel

3 General Areas

- MISC 9 Public Works Facility Yard Associated with Bldg 5
- HIST 3 Acetylene Generating Plant and Sludge Pit (J-36)
- HIST 5 Gun Mount Storage Cleaning & Repair Yard (I-22 to H-22)

1 Hazardous Waste Facility

- HWF 5 Building 98, Less than 90 day storage of Asbestos

4 Underground Storage Tank Locations

- UST 5 61-2 7000 gal Water Tank for Cable Testing
Near Building 215 Closed in place
- UST 15 P41.1 5000 gal Steel Tank for Diesel Fuel
Near Building 215 Removed 11/30/92
- UST 18 162-1 550 gal Steel Tank for Diesel Fuel
Near Building 162 Removed 7/26/94
- UST 6 363 2000 gal Transformer Oil Tank
Near Building 150
- 364 2000 gal Transformer Oil Tank
Near Building 150
- 365 12,000 gal Salt Water Tank
Near Building 150 Closed in Place
- 351 10,000 gal Fuel Oil Tank
Near Building 150 Closed in Place
- 150.1 4000 gal Steel Fuel Oil Tank
Near Building 150 Closed in Place 1/14/93
- Not identified as a POI but may require clean closure
- 301 100 gal Fuel Oil Tank
Near Building 7 Closed in Place 1950
- 302 2000 gal Gasoline Tank
Near Building 7 Closed in Place 1950
- 303 2000 gal Gasoline Tank
Near Building 7 Closed in Place 1950
- 304 300 gal Waste Oil Tank
Near Building 7 Closed in Place 1950
- 328 500 gal Fuel Oil Tank
Near Building 7 Closed in Place
- 53.1 1800 gal Concrete Fuel Oil Tank
Near Building 53 Removed 1/4/93
- 352 10000 gal Fuel Oil Tank
Near Pier 3 Closed in Place
- 104.1 9000 gal Steel Fuel Oil Tank
Near Pier 3 Closed in Place 2/25/93
- 377 12000 gal Salt Water Tank
Near Pier 3 Removed
- 109.1 300 gal Steel Solvent Tank
Near Pier 2 Removed 11/30/92
- 196.1 1000 gal Steel Waste Lube Oil Tank
Near Pier 2 Removed 1/4/93

353	500 gal Fuel Oil Tank Near Cafeteria Removed 1946
367	2000 gal Transformer Oil Tank Near Building 151 Closed in Place
368	2000 gal Transformer Oil Tank Near Building 151 Closed in Place

3 Shipyard Systems to the extent they need to be resolved for the area requested.

- SSS 1 Sewer Lines
- SWS 1 Force Drain Lines
- SWS 2 Storm Drain System

25 Points of Interest

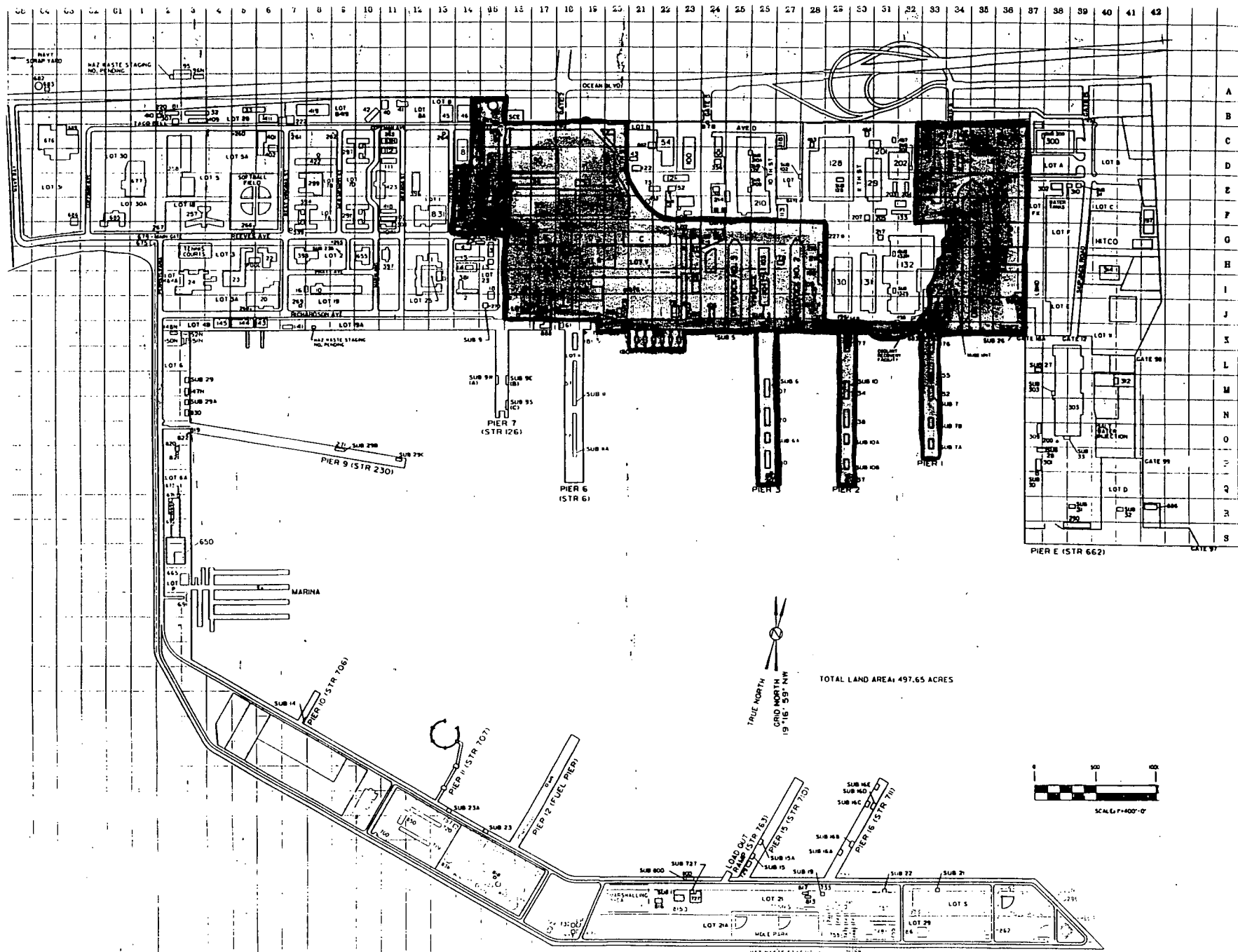


Table 1-1
BCT^a and Project Team Members
Long Beach Naval Complex

Name	Role/Responsibility	Phone	Affiliation
BCT MEMBERS			
Alan K. Lee	BEC ^b , LBNC ^c	619-532-2004, ext. 27	DON ^d
Alvaro Gutierrez	RPM ^e	562-590-5565	DTSC ^f
Martin Hausladen	RPM	415-744-2388	EPA ^g , Region IX
PROJECT TEAM MEMBERS			
Kim Ostrowski	Lead RPM, IRP ^h for LBNC	619-532-2004, ext. 15	DON
Duane L. Rollefson	RPM, Compliance	619-532-2004, ext. 23	DON
Kurt Baer	RPM, Compliance	619-532-2004, ext. 11	DON
Ed Dienzo	RPM, Associated Housing	619-532-2004, ext. 45	DON
LCDR ⁱ Anthony DiDomenico	BTC ^j LBNC	310-732-6131	DON
Faiq Aljabi	Environmental BLTL ^k	619-532-2004, ext. 18	DON
Kimberly Kesler	Base Closure Manager	619-532-2004, ext. 12	DON
John Hill	BRAC Project Manager	619-532-2004, ext. 22	DON
Jason Ashman	Base Closure Team Lead	619-532-2004, ext. 21	DON
Chris Leadon	Remedial Technical Manager	619-532-1150	DON
Jennifer Rich	Public Participation Specialist	562-590-4914	DTSC
Ron Okuda	EARS ^l	562-590-4885	DTSC
Hugh Marley	Geologist	213-266-7669	LARWQCB ^m
Judith Winchell	Reuse Specialist	415-744-2426	EPA
Bob Kanter	Manager of Env. Planning	562-590-4156	POLB ⁿ
Paul Ward	Consultant for POLB	562-590-4155	POLB
Betsy Foley	Environmental Manager	310-732-3975	POLA ^o
Larry Davidson	Project Manager	619-268-3383	CDM ^p Federal
Marc P. Smits	Delivery Order Manager	619-268-3383	CDM Federal

Notes:

- ^a BCT – Base Realignment and Closure Cleanup Team
- ^b BEC – BRAC Environmental Coordinator
- ^c LBNC – Long Beach Naval Complex
- ^d DON – Department of the Navy
- ^e RPM – Remedial Project Manager
- ^f DTSC – Cal-EPA Department of Toxic Substances Control
- ^g EPA – United States Environmental Protection Agency
- ^h IRP – Installation Restoration Program

- ⁱ LCDR – Lieutenant Commander
- ^j BTC – Base Transition Coordinator
- ^k BLTL – Business Line Team Leader
- ^l EARS – Environmental Assessment Reuse Specialist
- ^m LARWQCB – Los Angeles Regional Water Quality Control Board
- ⁿ POLB – Port of Long Beach
- ^o POLA – Port of Los Angeles
- ^p CDM – Camp, Dresser and McKee Inc.

Note: This table will be included in the 1998 BCP Update for Long Beach NAVSTA and LBNSY.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX (213) 266-7600



October 17, 1997

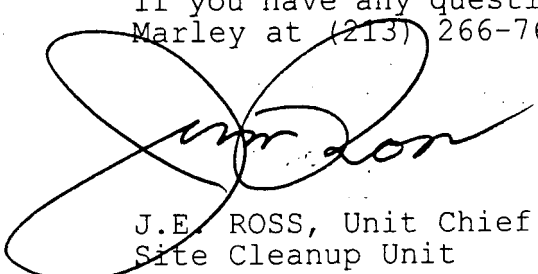
Mr. Ed Dienzo
Code 56SD.ED
Naval Facilities Engineering Command
Southwest Division BRAC Program Office
1420 Kettner Boulevard Suite 507
San Diego, CA 92101-2404 Southwest Division

**FINAL THIRD QUARTER GROUNDWATER MONITORING REPORT, FORMER NAVAL
STATION LONG BEACH, LONG BEACH CALIFORNIA (FILE No. 90-76)**

We have received and reviewed the Final Third Quarter Groundwater Monitoring Report for the Former Naval Station Long Beach, Long Beach, California, dated September, 1997. Our comments are as follows:

- . All chemicals of concern (COC) should remain the same as in the first round of sampling. proposed. Limiting analysis of a COC to one well will not provide any indication of possible trends in plume sizes and concentrations.
- . Identify and describe significant changes/trends in plume sizes and concentrations noted since the last monitoring event. Identify and clarify why VOCs in MW-1-12, present at concentrations of 23,000 ppb for vinyl chloride, 150 ppb for benzene, and 13 ppb for 1,1-dichloroethene, in the second quarter, are not reported in the third quarter.
- . Contaminant plumes, at concentrations several times over the California Ocean Plan Water Quality Objectives, the screening criteria established for the shallow groundwater at the Navy Mole are exist to the Mole boundaries at Site 1 and Site 2. Section 4.1 appears to infer that dilution of the plumes due to tidal mixing is appropriate. Note that groundwater plumes that exceed California Ocean Plan Water Quality Objectives must be addressed. Reference future work and/or any remedial actions proposed by the Navy.

If you have any questions regarding the above, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit

Mr. Ed Dienzo

Page 2

cc:

✓ Alvaro Gutterez, Department of Toxic Substances Control
✓ Martin Hausladen, Environmental Protection Agency
Alan Lee, Southwest Division

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX (213) 266-7600



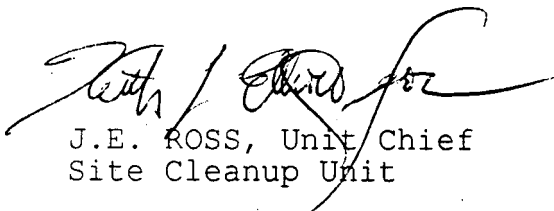
October 13, 1997

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
Code 1832.DR
1220 Pacific Highway
San Diego, CA 92132-5183

**NPDES MONTHLY MONITORING REPORT, JULY 1996 - NEX GAS STATION - LONG
BEACH NAVAL SHIPYARD, LONG BEACH, CALIFORNIA, (File No. 90-76)**

The Los Angeles Regional Water Quality Control Board has received and reviewed the NPDES Monthly Monitoring Report, July, 1997, for the NEX Gas Station at the Long Beach Naval Shipyard. We understand that the higher than expected pH reading (9.46) was a result of an un-calibrated pH instrument, and that a follow-up sample, with an instrument calibrated on-site, provided pH readings within the expected range for this site. Based on the above information, we have no objections to the monthly report.

If you have any questions regarding this matter, please contact Hugh Marley at (213) 266-7669.


J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Alvaro Guitierrez, Department of Toxic Substances Control
Martin Hausladen, U.S. Environmental Protection Agency
Alan Lee, Navy Southwest Division, San Diego

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX (213) 266-7600



October 17, 1997

Ed Dienzo
Code 56SD.ED
Naval Facilities Engineering Command
Southwest Division BRAC Program Office
1420 Kettner Boulevard Suite 507
San Diego, CA 92101-2404 Southwest Division

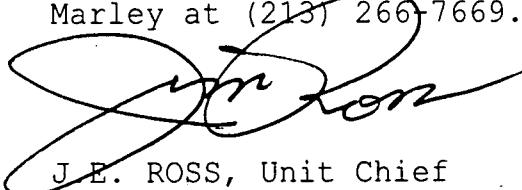
**DRAFT SECOND QUARTER GROUNDWATER MONITORING REPORT, FORMER NAVAL
STATION LONG BEACH, LONG BEACH CALIFORNIA (FILE No. 90-76)**

We have received and reviewed the Draft Second Quarter Groundwater Monitoring Report for the Former Naval Station Long Beach, Long Beach, California, dated July, 1997. Our comments are as follows:

The report recommends restricting SVOC sampling to one groundwater monitoring well, MW-1-12, due to the reduction of SVOCs noted at this site in the last quarter. Monitoring for the established chemicals of concern should continue as originally proposed. Limiting analysis of a COC to one well will not provide any indication of possible trends in plume sizes and concentrations.

Contaminant plumes, at concentrations several times over the California Ocean Plan Water Quality Objectives, the screening criteria established for the shallow groundwater at the Navy Mole are exist to the Mole boundaries at Site 1 and Site 2. Section 4.1 appears to infer that dilution of the plumes due to tidal mixing is appropriate. Note that groundwater plumes that exceed California Ocean Plan Water Quality Objectives must be addressed. Reference future work and/or any remedial actions proposed by the Navy.

If you have any questions regarding the above, please contact Hugh Marley at (213) 266-7669.



J.E. ROSS, Unit Chief
Site Cleanup Unit
cc:

Alvaro Gutterez, Department of Toxic Substances Control
✓ Martin Hausladen, Environmental Protection Agency
Alan Lee, Navy BRAC, Southwest Division

November 13, 1997

MEMORANDUM

SUBJECT: Building 129 Stairwell Survey Results

FROM: Steve M. Dean, (SFD-8-B) 
Superfund Technical Support Team

TO: Martin Hausladen, (SFD-8-2)
Federal Facilities Enforcement Branch

On Wednesday, November 5, 1997, I performed a confirmation survey for radium-226 in the stairwell of Building 129. Details of that survey are discussed below:

I used a Ludlum Model 2221 Ratemeter/Scaler that was recalibrated by Enviro Services and Repair on the previous day, November 4th. I used a Ludlum Model 44-20 3 x 3 sodium iodide detector with the L2221. This detector is three times more sensitive than the detectors that the Navy and CaDHS used for their gamma surveys.

I first performed a background check of the instrument in Room C by taking a 10 minute count with the detector face on the concrete floor. The scaler read 254,608 counts per 10 mins for a background count rate of 25,461 counts per minute (cpm).

Next, I performed a background check of the instrument in the center of Mezzanine stairwell landing. A 10 minute count with the detector face on the concrete floor read 334,094 counts per 10 mins for a rate of 33,409 cpm. This increase in background rate was due to the close proximity of the surrounding concrete structures in the stairwell.

I then surveyed every step tread and riser from the mezzanine landing up through the first run of stairs from the fourth floor to the roof. All observers agreed that my effort constituted 100% area survey. I arbitrarily chose a level of 40,000 cpm or higher as my resurvey level. I asked Bob O'Brien or LCmdr Lino Fraguso to resurvey any location that exceeded 40K cpm with an alpha meter to insure that no radium residues were present above the NRC allowable limit for alpha contamination. In all they resurveyed 11 locations but found the alpha levels well within acceptable limits. The highest gamma reading I could find anywhere on the stairwell was 42K cpm which was only 26% above the stairwell background. Since the typical screening action level for radiation contamination is 100% or twice background I used a very conservative screening level.

To insure that the instrument was still operating properly after

the survey I performed a close out background check of the instrument at the same location in Room C. The meter read 252,615 counts per a 10 minute count for a rate of 25,262 cpm which was within 1% of the first background measurement.

In the afternoon of that same day Penny Leinwander of CaDHS EMB resurveyed all of the 11 locations using her alpha meter that I had found earlier. She was unable to find any alpha levels that exceeded the NRC free release criteria in the stairwell.

I must conclude, based on the results of this confirmation survey that the radium removal action in Building 129 has been successfully completed.

If you would like to discuss these comments please contact me at x4-2391. Thank you.

cc: Michael Bandrowski
Richard Lessler
Periann Wood

Department of the Navy
POST CLOSURE RESIDUAL FUNCTION DIRECTOR
PUGET SOUND NAVAL SHIPYARD LONG BEACH DETACHMENT
P.O. Box 32563 Long Beach, CA 90832-2563

5090
Ser 100/292
November 18, 1997

California Environmental Protection Agency
Department of Toxic Substance Control
245 W. Broadway, Suite 350
Long Beach, CA 90802-4444
Attn: Mr. Alvaro Gutierrez

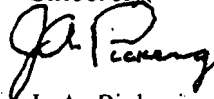
Dear Mr. Gutierrez:

Section 5.0 of the Draft Historical Radiological Assessment (HRA) for Long Beach Naval Shipyard, dated August 1997, states that an environmental monitoring program has not been required at Long Beach Naval Shipyard because no radiological work was performed at the shipyard, even though nuclear ships were based there. Although not required, some environmental monitoring was conducted from the mid-1970's to 1981.

Enclosure (1) provides the results of radiological environmental monitoring performed over a period of six years in the harbor at Long Beach Naval Shipyard.

If you have any questions, please do not hesitate to contact Mr. Robert O'Brien at (707) 556-3463 or facsimile (707) 556-3461.

Sincerely,



J. A. Pickering
Captain, U.S. Navy

Enclosure:
Environmental Monitoring Results

Copy to:
Ms. Penny Leinwander, CA DHS
Mr. Martin Hausladen, US EPA
Mr. Steve Dean, US EPA
LCDR Tony DiDomenico, CSO LBNSY, NAVFACENG(SWDIV)
Mr. Alan Lee, NAVFACENG(SWDIV)
Mr. Robert O'Brien, SSPTS Environmental Detachment, Mares Island

LONG BEACH NAVAL SHIPYARD

ENVIRONMENTAL MONITORING RESULTS

1976-1981

The Naval Nuclear Propulsion Program (NNPP) performed quarterly environmental harbor monitoring at Long Beach Naval Shipyard (LBNSY) through 1981, due to a brief prior history of berthing a few nuclear-powered surface ships at the shipyard in the late 1960s and early 1970s. Records indicate that no radiological work was performed on any of these ships while at the shipyard. There are no reports of routine environmental analyses detecting any radionuclides associated with the NNPP.

Starting in the mid-1970s, a portion of the routine environmental samples were also analyzed once per year by a Department of Energy (DOE) laboratory (the Knolls Atomic Power Laboratory) using more sensitive procedures. The samples were analyzed wet (consistency of thick mud). The lower "minimum detectable activity" levels for these analyses also detected no NNPP radionuclides in most cases; i.e., none in marine life or water samples, and none for all but one year in sediment samples. Trace levels of cobalt (Co)-60 were found in three sediment samples in 1980. The highest result was 0.106 pCi/g (this level would be reduced to 0.011 pCi/g in 1997 due to the 5.27 year half-life of Co-60). These trace levels are lower than those seen in some other US harbors where nuclear-powered ships have been based, for which the US EPA has previously concluded that no action was necessary.

Other radionuclides detected during the enhanced DOE laboratory analyses included naturally occurring levels of uranium and thorium daughter products and potassium-40. Cesium-137 was observed at levels consistent with world-wide levels for fallout from weapons testing. No elevated levels of any radionuclides were observed in harbor samples taken at LBNSY, which could be related to Naval general radioactive material (G-RAM, non-NNPP) activities.

Results of the DOE laboratory analyses of samples for 1976 through 1981 (all the years available) are presented in the following table:

Sheet1

LONG BEACH HARBOR SEDIMENT SAMPLE RESULTS 1976-1981							
Solid sample results in pCi/g. Water sample results in pCi/l. (a)							
Sample	1976 Samples						
Designation	Uranium	Thorium	Potassium	Cesium	Cobalt	Other	
S-10	0.468	0.752	12.6	<0.122	(b)		
S-21	0.528	0.807	10.8	<0.112	(b)		
	1977 Samples						
S-12	0.391	0.556	11.3	0.130	(b)		
S-21	0.477	0.662	13.4	0.147	(b)	U-235	0.148
	1978 Samples						
S-30	0.450	0.622	11.6	0.068	<0.022		
S-32	0.468	0.738	13.9	0.045	<0.020		
Mollusks	no data	no data	0.491	<0.011	<0.009		
Crustacean	0.028	0.055	0.734	<0.008	<0.008		
Seaweed	no data	no data	8.70	<0.014	<0.018		
	1979 Samples						
S-2	0.426	0.706	13.7	0.081	<0.023		
S-5	0.249	0.371	6.81	0.153	<0.012		
S-10	0.351	0.474	9.58	0.141	<0.014		
S-15	0.275	0.484	8.73	0.185	<0.015		
S-19	0.485	0.634	12.5	0.095	<0.016	Ru-106	0.299
S-22	0.410	0.663	12.9	0.073	<0.015		
S-27	0.245	0.397	7.93	0.130	<0.014		
S-34	0.555	0.805	14.5	0.076	<0.018		
water-1	no data	no data	no data	<7.32	<8.22		
water-2	no data	no data	383	<5.06	<9.40		
Mollusks	no data	no data	1.56	<0.008	<0.014		
Crustacean	no data	no data	1.82	<0.013	<0.015		
Seaweed	no data	no data	3.20	<0.009	<0.012		
	1980 Samples						
S-2	0.449	0.624	13.0	0.080	<0.015		
S-5	0.506	0.547	9.73	0.101	0.017		
S-10	0.528	0.818	13.9	0.080	<0.015		
S-15	0.351	0.522	9.61	0.099	<0.012		
S-19	0.298	0.478	9.19	0.101	<0.019		
S-21	0.216	0.301	9.68	0.063	0.054		
S-22	0.250	0.305	9.69	0.093	<0.015		
S-27	0.223	0.340	8.74	0.096	0.106		
S-34	0.265	0.440	8.67	0.127	<0.014		

Sample			1980 continued					
Designation		Uranium	Thorium	Potassium	Cesium	Cobalt	Other	
water-1		no data	24.6	no data	<7.17	<7.26		
water-2		no data	no data	no data	<8.13	<9.72		
Seaweed		0.057	0.461	13.5	<0.020	<0.020		
			1981 Samples					
S-2		0.394	0.554	11.6	0.056	<0.021		
S-5		0.836	0.657	10.8	0.112	<0.015		
S-10		0.228	0.371	6.87	0.145	<0.009		
S-15		0.369	0.401	7.83	0.107	<0.013		
S-19		0.404	0.587	11.5	0.062	<0.020		
S-21		0.377	0.515	11.3	0.078	<0.014		
S-22		0.301	0.492	11.6	0.057	<0.014		
S-27		0.170	0.227	5.56	0.098	<0.010		
S-34		0.471	0.683	12.6	0.074	<0.016		
water-1		no data	no data	no data	<8.77	<6.40		
water-2		no data	no data	436	<9.27	<6.53		
(a) "Potassium" is potassium-40, "Cesium" is cesium-137, "Cobalt" is cobalt-60.								
"Uranium" and "thorium" refer to the average of all detectable daughters in the decay series.								
(b) None detected. No minimum detectable activity reported.								
(c) Values preceded by a "<" are the minimum detectable activity levels at the 90 percent confidence level.								



BRAC PROGRAM OFFICE
1420 Kettner Blvd, Suite 501
San Diego, CA 92101-2404

FAX: (619) 532-2075

From: John Hine

Phone: (619) 532-2004 ext. 22

To: JUDITH WINCHELL

Date: 11/25/97

Subject: FASL

Fax: 415 - 744 - 1916

Message:

Number of pages, including cover page: 13



DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE PROGRAM OFFICE
SOUTHWEST DIVISION, NAVAL FACILITIES ENGINEERING COMMAND
1420 KETTNER BOULEVARD, SUITE 507
SAN DIEGO, CALIFORNIA 92101-2404

5090

Ser 56LB.JH/0986

November 18, 1997

Mr. Martin Hausladen
Remedial Project Manager
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street (H-9-2)
San Francisco, CA 94105-3901

Dear Mr. Hausladen:

This letter is a request to the United States Environmental Protection Agency (U.S. EPA) to review enclosure (1), the Draft Finding of Suitability to Lease Building 197 at the Long Beach Naval Shipyard, Long Beach, California in accordance with the *Standard Procedures for Consultation on FOST/FOSLs - To be Used at Closing Navy Facilities in California*.

The Navy would greatly appreciate a 7-day review of this document from the date this letter is received by your office.

Should you have any questions or concerns, please contact John Hill at (619) 532-2004, extension 22.

4140 / 746

Sincerely,

Jason Ashman for

KIMBERLY KESLER
Base Closure Manager
By direction of the Commander

Encl:

- (1) Draft Finding of Suitability to Lease Building 197 at the Long Beach Naval Shipyard, Long Beach, California - [2 Copies]

5090

Ser 56LB.JH/0986

November 18, 1997

Copy to: (w/o encl)
Ms. Judith Winchell
Federal Facilities Cleanup Office
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street (H-9-2)
San Francisco, CA 94105-3901

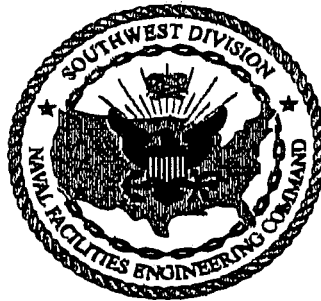
Mr. Alvaro Gutierrez
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, CA 90802-4444

Mr. Aaron Yue
Office of Military Facilities
Department of Toxic Substances Control
245 West Broadway, Suite 350
Long Beach, CA 90802-4444

Mr. Hugh Marley
Regional Water Quality Control Board
Los Angeles Region
101 Centre Plaza Drive
Monterey Park, CA 91754

DRAFT

**FINDING OF SUITABILITY TO LEASE
BUILDING 197 AT THE LONG BEACH NAVAL SHIPYARD
LONG BEACH, CALIFORNIA**



12 NOVEMBER 1997

**SOUTHWEST DIVISION NAVAL FACILITIES ENGINEERING COMMAND
BRAC PROGRAM OFFICE
1420 Kettner Boulevard, Ste. 507
San Diego, CA 92101-2404**

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1.0 PURPOSE

The purpose of this Finding of Suitability to Lease (FOSL) is to review the currently available information related to the environmental condition of the property, hereinafter referred to as "Building 197". Further, it is to determine whether Building 197 can be leased to the City of Long Beach. The City of Long Beach will sublease Building 197 to New Image Emergency for The Homeless (New Image) which will provide bedding and food services to homeless individuals. The proposed lease is for a period of 6 months.

This FOSL has been prepared in accordance with DoD Policy on the Environmental Review Process to Reach a Finding of Suitability to Lease (FOSL).

2.0 BIBLIOGRAPHY

The following documents were reviewed to provide the summary information in this FOSL:

- (a) Southwest Division Naval Facilities Engineering Command, *Final Environmental Baseline Survey (EBS) at Long Beach Naval Shipyard, Los Angeles County, California*, November 1996.
- (b) Southwest Division Naval Facilities Engineering Command, *Base Realignment and Closure Cleanup Plan (BCP) for Naval Shipyard Long Beach, CA*, October 1996
- (c) Long Beach Naval Shipyard Asbestos Survey For Building 197, June 23, 1994

3.0 PROPERTY DESCRIPTION

Building 197 is located on Pier E of the former Long Beach Naval Shipyard (LBNSY) (see Figure 1). It is a 6400 square foot one-story corrugated metal building on a poured concrete slab. Built in 1967 it was used for storage of equipment and supplies managed by the Defense Reutilization and Marketing Office (DRMO).

4.0 REGULATORY COORDINATION

The LBNSY is not on the U.S. Environmental Protection Agency National Priorities List (NPL) or part of a Federal Facilities Agreement. The Navy's current policy, however, is that Installation Restoration Program (IRP) activities at both NPL and non-NPL sites shall be accomplished in accordance with the National Contingency Plan/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980.

Superfund Amendments and Reauthorization Act of 1986 (SARA) and CERCLA establish a series of programs for the cleanup of hazardous waste disposal and spill sites nation-wide. One of those programs, the Defense Environmental Restoration Program (DERP) is contained in SARA Section 211. The Navy's IRP is a component of DERP.

The California Environmental Protection Agency (CAL-EPA), Department of Toxic Substances Control (DTSC), the California Regional Water Quality Control Board (RWQCB) - Los Angeles Region, and United States Environmental Protection Agency (U.S. EPA) have partnered with the Navy to participate in

the IRP to review, and provide comments on, the environmental investigation reports listed in Section 2.0. On October 30, 1997 the Navy notified the U.S. EPA and DTSC of the initiation of this FOSL.

5.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

The proposed lease is categorically excluded from NEPA. Renewals or real estate ingrats and outgrants involving existing facilities and land wherein the use does not change significantly are categorically excluded by OPNAVINST 5090.1B 2-4.1 (17). A categorical exclusion statement was prepared (see Exhibit 1).

6.0 COMMUNITY ENVIRONMENTAL RESPONSE FACILITATION ACT ENVIRONMENTAL BASELINE SURVEY HISTORY AND FINDINGS

The Final Environmental Baseline Survey (EBS) at Long Beach Naval Shipyard, Los Angeles County, California was completed and submitted to the regulatory agencies for review and comment on November 21, 1996. Final concurrence was received on January 8, 1997. The area surrounding Building 197 is classified as Environmental Condition of Property (ECP) area type 7, areas that are unevaluated or require additional evaluation. It is recommended for additional evaluation because additional groundwater investigation was planned for IR Site 12 and Building 314, a RCRA permitted facility (see Figure 1).

7.0 ENVIRONMENTAL FACTORS

Environmental factors related to hazardous substances and/or petroleum products, which may or may not pose constraints, to the lease of Building 197, are summarized below.

7.1 *Environmental Factors Which Pose No Constraints*

The following known environmental factors have been determined to pose no constraints to the lease of Building 197:

- Pesticides
Pesticide application was conducted on an as-needed basis by certified contractors. There were no mixing or storage areas on the subject parcel. To the best of the Navy's knowledge, these pesticides were used according to manufacturers' specifications.
- Aboveground Storage Tanks (AST)
No ASTs are currently located on the subject parcel.
- Underground Storage Tanks (UST)
No USTs are currently located on the subject parcel.
- Oil/Water Separators
No oil/water separators have been identified on the subject parcel.

- Satellite Accumulation Points (SAP)
No SAPs were located on the subject parcel.
- Ordnance
No evidence has been found to indicate the subject parcel ever handled munitions.
- Medical/Biohazardous Waste
No evidence has been found to indicate that medical/biological waste was generated or stored on the subject parcel.
- Polychlorinated Biphenyls (PCB)
No PCB-containing equipment has been identified on the subject parcel.
- Radon
Representative sampling was conducted on the LBNSY between May and December 1993. Radon levels were less than 2 pCi/l, below the U.S. EPA's radon action level of 4 pCi/l.
- Radiological Wastes
No known radioactive waste was used, stored, or generated on the subject parcel.
- Hazardous Waste/Material Storage
5 gallon cans of paint, spray paint, 1 gallon cans of adhesives and resins, 55 gallon drums of lube oil and 55 gallon drums of cutting oil were stored in Building 197. However, the EBS states there are no environmental concerns regarding these substances. All hazardous waste/material has been removed from Building 197.

Re state as:
all haz. sub. as
listed above, has
been removed
from Bldg 197.

7.2 Environmental Factors Which May Pose Constraints

The following known environmental factors may pose constraints to the lease of Building 197:

- Soil & Groundwater
Building 197 is located north of IR Site 12 and Building 314 (RCRA permitted facility). Additional groundwater assessment and monitoring is planned for these sites. The subsurface impacts of these sites to Building 197 are currently unknown. The lease will contain intrusive work restrictions (see Section 9.0).

8.0 OTHER ENVIRONMENTAL FACTORS

Other known environmental factors not related to hazardous substances and/or petroleum products, which may or may not pose constraints, to the lease of Building 197, are summarized in this section.

8.1 Other Environmental Factors Which Pose No Constraints

The following known environmental factors have been determined to pose no constraints to the lease of Building 197:

- Historical & Cultural Resources
No known historic structures or landmarks exist on the subject parcel. Building 197 is not eligible for the National Register of Historic Places.

- Natural Resources
No natural resources were identified on the subject parcel.

8.2 Other Environmental Factors Which May Pose Constraints

The following known environmental factors may pose constraints to the lease of Building 197:

- Lead Based Paint (LBP)
The DoN acts in accordance with DoD Lead Based Paint (LBP) policy to manage LBP in a manner protective of human health and the environment, and comply with Title X of Public Law 102-550. Title X of Public Law 102-550, the Residential Lead-Based Paint Hazard Reduction Act of 1992 (i.e. Subchapter IV of the Toxic Substances Control Act, 15 United States Code Section 2681, et seq.) requires residential 'target housing' to be inspected. Building 197 is not 'target housing', and as a result, no LBP surveys have been conducted to date. It is assumed, however, that due to the age of the building, LBP may exist.
- Asbestos Containing Material (ACM)
An asbestos assessment was performed in June 1994. Eleven representative samples were taken of all suspect homogenous areas. The analysis indicated that majority of the ACM has been maintained by the Public Works department and have low to moderate damage and require no further action. These materials do not pose a significant exposure potential. If lessee intends to make any improvements or repairs that require the removal of asbestos, an appropriate asbestos disposal plan must be incorporated into the plans and specifications and submitted to the Government. ACM which during the period of this lease becomes damaged or deteriorated will be abated by the lessee. The lessee will be notified of the presence of ACM and will be provided a copy of reference (C) in the lease documentation.

Handwritten signature: J. [unclear]

9.0 ENVIRONMENTAL LEASE CONDITIONS

The proposed lease will contain conditions in substantially the same form as are attached to DoD Policy On The Environmental Review Process To Reach A Finding Of Suitability To Lease (FOSL). The proposed lease will also contain the following additional conditions substantially set out below:

- The lessee and any sublessee shall notify their employees of the local site conditions and associated restrictions concerning site usage.
- Lessee shall not conduct or permit any subsurface excavation, digging, drilling, or other disturbance of the surface.
- Based on the age of the Building 197, lessee understands and agrees that lead based paint (LBP) is assumed to be present in and about Building 197. Lessee shall manage and dispose of the LBP in accordance with all applicable federal, state and local laws and regulations.
- Lessee understands and agrees that asbestos and ACM are present in and about Building 197. If lessee intends to make any improvements or repairs that require the removal of asbestos, an appropriate asbestos disposal plan must be incorporated into the plans and specifications and submitted to the Government. ACM which during the period of this lease becomes damaged or deteriorated will be abated by the lessee. Responsibility for the management of ACM will be imposed on the lessee under the terms of the lease.

10.0 CONCLUSION

Based upon the foregoing information and analysis, I find that the subject property is suitable for a lease to the City of Long Beach and may be used pursuant to the proposed lease, with the specified use restrictions, with an acceptable risk to human health and/or the environment and without interference with environmental cleanup activities. This determination is based on an evaluation of the existing conditions on the subject parcel as set out in the documents listed in Section 2.0 and the exhibits referenced throughout the text.

This Finding of Suitability to Lease and the Asbestos Survey report will be provided to the City of Long Beach in connection with the delivery of the lease.

Date

T.M. BOOTH
CAPT, CEC, USN
Commander
Southwest Division
Naval Facilities Engineering Command

Draft Bldg 197 FOSL
11/12/97

8

LOCATION MAP - BUILDING 197

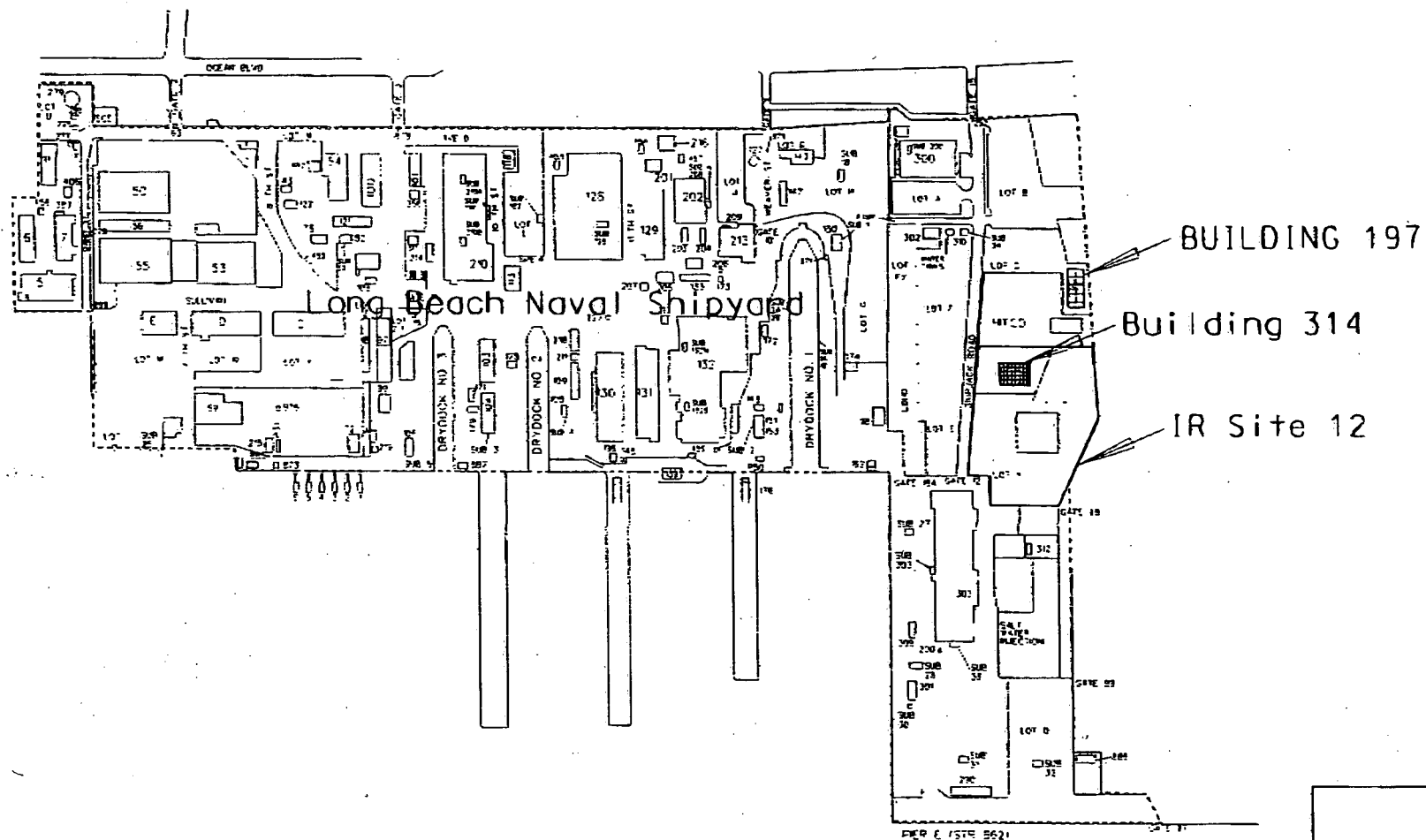


FIGURE 1

CATEGORICAL EXCLUSION

LEASE FOR CITY OF LONG BEACH TO USE BUILDING 197 AS A HOMELESS SHELTER AT THE FORMER NAVAL SHIPYARD, LONG BEACH, CALIFORNIA

1. PROJECT DESCRIPTION

Lease to allow the City of Long Beach to use Building 197 as a homeless shelter at the closed Long Beach Naval Shipyard. The building will be subleased to New Image Emergency Shelter for the Homeless in order to hold the 1997-1998 Long Beach Cold/Wet Weather Program. The program extends from November 18, 1997 through March 31, 1998 and provides food and shelter to the City's homeless persons.

SUMMARY OF IMPACTS

- a. Does not affect public health and safety
- b. Does not involve action affecting wetlands, endangered or threatened species, historical or archeological resources, or hazardous wastes sites
- c. Does not involve effects on the human environment that are highly uncertain, unique or contain unknown risks, or which are scientifically controversial.
- d. Does not establish precedent or make decisions in principle for future actions with significant effects.
- e. Does not threaten a violation of Federal, State, or local law or requirement imposed for protection of the environment.

2. REGULATION

The project will not effect nor be in conflict with the provisions of Chapter 2, subsection 2-4.1a-e of OPNAVINST 5090.1B of 1 November 1994.

3. CATEGORICAL EXCLUSION

The following Categorical Exclusions, as listed in OPNAVINST 5090.1B, dated 1 November 1994, subsection 2-4.1, are applicable:

- (17) Renewals and/or initial real estate ingrats and outgrants involving existing facilities and land wherein use does not change significantly. That includes, but is not limited to, existing or Federally-owned or privately-owned housing, office, storage, warehouse, laboratory, and other special purpose space.

4. PROJECT QUALIFICATION

Issuance of the lease will have no significant effect on the human environment. The Lease will provide food and shelter to the City of Long Beach homeless persons during cold and wet weather. The City will ensure that all fire, health and safety precautions are taken for this type of activity, as deemed appropriate by the City Fire Department and the City's health and human services department. This lease will not impede any of the clean-up efforts being taken on the property. The City will coordinate this activity through the Site Caretaker Office. This categorical exclusion meets NEPA requirements.

5. DETERMINATION

Based upon the information presented above, It has been determined that an Environmental Assessment is not required.

Decision made by:

Louis Misko

LOUIS MISKO
BRAC Operations Officer

5 Nov 97

Date

EXHIBIT 1

Department of the Navy
POST CLOSURE RESIDUAL FUNCTION DIRECTOR
Puget Sound Naval Shipyard Long Beach Detachment
P.O. Box 32563 Long Beach, CA 90832-2563

5090

SER 100/296

December 4, 1997

California Environmental Protection Agency
Department of Toxic Substance Control
245 West Broadway, Suite 350
Long Beach, CA 90802-4444
Attn: Alvaro Gutierrez

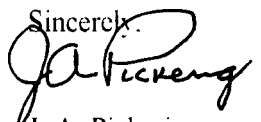
**RESPONSE TO THE DEPARTMENT OF HEALTH SERVICES (DHS) DRAFT REVIEW
COMMENTS TO THE DEPARTURE RADIOLOGICAL SURVEY REPORT FOR DEFENSE
LOGISTICS AGENCY (DLA) FACILITIES AT LONG BEACH NAVAL SHIPYARD
(LBNSY) DATED JANUARY 22, 1997**

Dear Mr. Gutierrez:

Enclosure (1) is the response to draft DHS review comments to the Defense Distribution depot San Diego Departure Radiological Survey Report for DLA facilities at LBNSY received on September 22, 1997.

The resolution to these comments have been incorporated, where applicable, into the Draft Decommissioning Radiological Survey and Remediation Report for Long Beach Naval Complex dated November 1997. The decommissioning report will be distributed under separate cover.

If you have any questions, please do not hesitate to contact Mr. Robert O'Brien at (707) 556-3463 or facsimile (707) 556-3461.

Sincerely,

J. A. Pickering,
Captain, U.S. Navy

Enclosure:

(1) Response to the Department of Health Services (DHS) draft review comments regarding the Defense Distribution Depot San Diego Departure Radiological Survey - Long Beach Naval Shipyard Facilities dated January 22, 1997

Copy to:

Ms. Penny Leinwander, CA DHS
Mr. Martin Hausladen, US EPA
Mr. Steve Dean, US EPA
CDR David Farrand, USN NAVSEA 07R
LCDR Lino Fragoso, USN NAVSEADET RASO
Mr. Robert O'Brien, SSPTS, Vallejo
Mr. David Mack, DDRW Rad Health Group

Response to Department of Health Services Draft Review Comments (received 9/22/97) regarding the Defense Distribution Depot San Diego Departure Radiological Survey - Long Beach Naval Shipyard Facilities dated January 22, 1997

Specific Comments:

Comment 1: Page 1, Para. 3; Department of Health Services (DHS) proposes that survey methodology in the Radiological Scoping/Confirmation Plan (RS/CP) prepared by the Navy be performed in Buildings D, E, G, 50 and 53.

Response: The gamma and beta/gamma surveys described in the Defense Distribution Region West (DDRW) report are considered to be essentially equivalent to the gamma and beta/gamma surveys proposed in the RS/CP for Supply building 55 at Long Beach Naval Complex (LBNC). However, since no alpha meter or swipe surveys were performed by DDRW, the Supervisor of Shipbuilding, Portsmouth (SSPORTS) Environmental Detachment will accomplish the following additional surveys on buildings D, E, G, 50, 53 and 56:

A. Alpha stationary meter readings will be taken in a minimum of twenty-five (25) grids on each floor of each building.

B. Alpha swipe surveys will be taken in a minimum of twenty-five (25) grids on each floor of each building.

The evaluation criteria for the above alpha surveys and swipes will be the same as was used for building 55.

Comment 2: Page 4; Equation 5-3 of NUREG/CR-5849 should be used to calculate the MDA for static measurements from a ratemeter and not Equation 5-2 as listed. In addition, the time constant should be determined using manufacturer information on instrument operation and not on how long the ratemeter is held in one place. Please verify that the MDA calculation is correct.

Response: The basis for selecting Equation 5-2 of NUREG/CR-5849 in lieu of Equation 5-3 was the fact that the surveys were performed by placing the probe approximately one centimeter (or less) away from the surface for approximately 30 seconds count time (**integrated** measurement mode) and reading the total counts for that period. NUREG/CR-5849 states that Equation 5-3 should be used for a **ratemeter** instrument for scanning for surface activity measurements and that Equation 5-2 should be used for a static **integrated** measurement over a preset time.

Based on the above, it is considered that the MDA calculation provided in the Defense Distribution Depot Departure Radiological Survey Report is correct.

Comment 3: Page 5, Table 1; Please specify which radionuclides are the contaminants of concern and show how the instruments used to survey will demonstrate compliance with the acceptance criteria listed in this table.

Response: The radionuclides of concern in the Defense Distribution Depot buildings at LBNC are the same as those of concern in Supply building 55; namely, radium (Ra)-226 and thorium (Th)-232.

The beta/gamma count rate instrument IM 247B/PD (Eberline E140N) is a portable pancake type thin window Geiger-Mueller (GM) gas filled chamber similar to that used during the manual surveys performed by SSPTS in building 55. The gamma detection instruments, Eberline PRM-7 and Ludlum 12 SL, utilize sodium iodide crystal scintillation detectors similar to those utilized with the USRADS equipment to survey building 55. It is considered that, during the conduct of previous similar radiological surveys, where these instruments were utilized, compliance with the acceptance criteria listed in Table 1 has been demonstrated.



DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132-5190

5090
Ser 56LB.AL/1027
December 9, 1997

Mr. Alvaro Gutierrez
State of California Environmental Protection Agency
Department of Toxic Substances Control
Region 4 Base Closure Unit
Office of Military Facilities
245 West Broadway, Suite 350
Long Beach, CA 90802-4444

Re: Concurrence of Remedial Investigation Results for Installation Restoration
(IR) Sites 8, 10 and 11 at Long Beach Naval Shipyard

Dear Mr. Gutierrez:

Pursuant to our discussions at the Base Realignment and Closure (BRAC) Cleanup Team meeting on December 3, 1997 the Department of the Navy is requesting that the Department of Toxic Substances Control concur with the conclusions and recommendations for IR Sites 8, 10 and 11 as presented in the Final Remedial Investigation (RI) report dated June 2, 1997. Your concurrence will allow the Navy to continue with the remedial process for these IR sites by preparing the Feasibility Study (FS), Proposed Plan, and Record of Decision.

The Final RI report of June 2, 1997 addresses IR Sites 8 through 13 at Long Beach Naval Shipyard. Based on the RI results, "further groundwater investigation" was recommended for Sites 9, 12 and 13, and "no further action" was proposed for Sites 8, 10 and 11. The "further groundwater investigation" activities for IR Sites 9, 12 and 13 were conducted recently. Preliminary data has shown that the extent of groundwater contamination, especially at IR Site 9, is greater than originally anticipated. Additional time will be required to fully delineate the groundwater plume at this site. The Navy plans to issue an Extended RI report after the groundwater investigation is complete for IR Sites 9, 12 and 13. As for IR Sites 8, 10 and 11, since "no further action" for industrial use purposes was recommended, the Navy would like to proceed with the preparation of the FS. The purpose of the FS is to ensure appropriate remedial alternatives (e.g. deed restrictions) are developed and evaluated such that relevant information concerning the remedial action options can be presented to the decision-makers.

5090
Ser 56LB.AL/1027
December 9, 1997

Your concurrence on the RI results for IR Sites 8, 10 and 11 will enable the BRAC Cleanup Team to achieve its goal of *expediting and improving environmental response actions in order to facilitate the disposal and reuse of Long Beach Naval Complex, while protecting human health and the environment.* We would appreciate a concurrence letter addressed to the undersigned and postmarked within 15 calendar days from receipt of this request.

Please direct any questions that you may have regarding this request to the undersigned at (619) 532-4748 and any technical questions about IR Sites 8 through 13 to Ms. Kim Ostrowski at (619) 532-4745.

Sincerely,



ALAN K. LEE
BRAC Environmental Coordinator
By direction of the Commander

Copy to:
Mr. Martin Hausladen
U. S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Mr. Hugh Marley
California Environmental Protection Agency
Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754-2156



Roy F. Weston, Inc.
One Concord Centre, Suite 1580
2300 Clayton Road
Concord, California 94520-2148
510-603-7900 • Fax 510-603-7901

December 12, 1997

Mr. Martin Hausladen, SFD-8-2
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

W.O. #04900-006-008-2000
DCN: 4900-06-08-AACD

Subject: Comments on Bechtel Final Responses to Organotin Data Validation Issues
Site 7, Long Beach Naval Shipyard

Dear Mr. Hausladen;

The Navy's contractor, Bechtel, has sent responses to EPA's letter of 5 August 1997 which provided additional clarification and rationale for recommending rejection of selected organotin data.

WESTON had recommended rejection of organotin results from three sample delivery groups (CK3104, CK3122, and CK3072) due to laboratory exceedance of sample holding times and improper sample preservation and handling by field sampling personnel. Sample holding times ranged from 28 to 48 days. Sample holding times of 14 days for organic analytes are specified by the U.S. EPA Contract Laboratory Program (CLP), *Test Methods for Evaluating Solid Waste* (SW-846), and *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* (40 CFR 136), however the laboratory SOP apparently allows a holding time of 28 days. Samples in the same sample delivery groups were received at the laboratory with temperatures ranging from 17.8 to 20.7 °C. The above references specify sample preservation with ice or refrigeration at a temperature of 4 °C ± 2 °C. Organometallic compounds such as tributyltin have chemical properties more like organic compounds than metals and, thus, are readily subject to both thermal and microbial degradation.

The argument made by Bechtel in the second paragraph of the response to Comment 1 does not adequately address the issue of sample temperature. It takes time to collect sediment samples; if each sample had been properly put on sufficient ice as it was collected over the sampling day, then only the final sample(s) would have been warmer than 4°C. This normal sample preservation procedure does not appear to have been followed.

The Navy's contractor indicated that organotin results for three of the samples (26006101, 26006201, and 26005801) in delivery group CK3122 were not used due to holding times of 133 days. Instead, new samples were collected and analyzed (see response to Comment 2). However, new sample identification numbers were not assigned even though samples were





Roy F. Weston, Inc.
One Concord Centre, Suite 1580
2300 Clayton Road
Concord, California 94520-2148
510-603-7900 • Fax 510-603-7901

December 17, 1997

Mr. Martin Hausladen, SFD-8-2
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

W.O. 04900-006-008
DCN: 4900-06-08-AACF

Subject: **Resolution of Final Responses to Organotin Data Validation Issues
Site 7, Long Beach Naval Shipyard**

Dear Mr. Hausladen:

A conference call was held on 15 December 1997 with the Navy's contractor, Bechtel, to discuss final resolution of all outstanding issues described in WESTON's letter of 12 December 1997 which provided additional clarification and rationale for recommending rejection of selected organotin data.

WESTON had recommended rejection of organotin results from three sample delivery groups (CK3104, CK3122, and CK3072) due to laboratory exceedance of sample holding times and receipt of samples at temperatures above $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. It was clarified that this data rejection applies only to samples where tributyltin was reported as non-detected by the laboratory. Therefore, only organotin results for sample 26001302 in sample delivery group CK3104 would be rejected. Results for samples in which TBT was detected should be qualified as estimated concentrations; it is important to realize that reported results may exhibit a slight low bias compared to actual concentrations in these samples. However, these data are still valid for all purposes including determining extent of contamination and human health and ecological risk assessment.

The Navy's contractor is clarifying text in Section 4.1.1 to indicate that organotin analysis was inadvertently performed twice for eight sediment samples but only data which met holding times was used in the remedial investigation report.

All outstanding issues regarding organotin results have been satisfactorily resolved. Please contact Dr. Roger McGinnis at (206) 521-7668 if you have questions.

Very truly yours,

ROY F. WESTON, INC.

Karla Brasaemle, R.G.
Site Manager

KB/ed





Mr. Martin Hausladen
U.S. EPA Region IX

December 12, 1997
Page 2

collected during an additional sampling event. WESTON recommended that new sample numbers be assigned to these three samples to prevent confusion with earlier results. All other sample results in delivery group CK3122 should still be rejected due to holding time exceedances (28 days) and improper preservation (17.8 °C).

Use of data recommended for rejection would result in organotin results being reported as non-detected with normal laboratory detection limits. The samples potentially could have contained higher concentrations of target organotin analytes which, due to holding time exceedance and improper preservation, may have degraded to levels below laboratory reporting limits by the time samples were analyzed. This is in contrast to data which were qualified as undetected due to on-going laboratory blank contamination. In those cases reported detection limits were elevated.

WESTON still recommends that the data in question be rejected. A determination must be made if there are sufficient non-rejected data to properly evaluate the site or if resampling and reanalysis are required. If you would like additional information regarding organotin chemistry and/or analysis from a nationally known expert, I recommend you contact Dr. Cheryl Krone at NOAA's Montlake Laboratory in Seattle, Washington. Please contact Dr. Roger McGinnis at (206) 521-7668 if you have questions about this letter.

Very truly yours,

ROY F. WESTON, INC.

Karla Brasaemle, R.G.
Site Manager

KB/ed



DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132-5190

5090
Ser 56LB.KO/1047
December 18, 1997

Mr. Martin Hausladen
U. S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Hausladen:

Enclosed for your review is the Draft Addendum to the Final Groundwater Investigation Work Plan (Supplement to the RI for Long Beach Naval Shipyard) for IRP Sites 9, 12 and 13. As agreed in our meeting on November 21, 1997, the addendum addresses soil sampling locations and procedures at IR Site 9. We request your written comments by January 7, 1997.

If you have any questions please contact Ms. Kim Ostrowski at (619) 532-4745.

Sincerely,

KIMBERLY A. OSTROWSKI
Deputy Base Closure Manager
By direction of the Commander

Identical copy to:
Mr. Hugh Marley
California Environmental Protection Agency
Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey, CA 91754-2156

Mr. Alvaro Gutierrez
California Environmental Protection Agency
Department of Toxic Substances Control
Region 4
245 West Broadway, Suite 425
Long Beach, CA 90802-4444

← Kim, too - Please



**OHM Remediation
Services Corp.**

A Subsidiary of OHM Corporation

December 23, 1997

Mr. Martin Hausladen
Remedial Project Manager
Hazardous Waste Management Division (H-9-2)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

Subject: Transmittal of Plan of Action, Building 128, Long Beach Naval Shipyard

Dear Mr. Hausladen:

Please find enclosed a copy of the above-referenced document submitted in behalf of the Department of the Navy, Southwest Division, Naval Facilities Engineering Command, San Diego, California. Please note the schedule included in the Plan of Action. We would wish that you could review the document and provide comments by January 15, 1997. Knowing that this is a very ambitious schedule, we thank you in advance for your help in keeping to it. We know that this will take extra effort on your part.

If you have any questions, please call Duane Rollefson, RPM, SWDIV, at (619) 532-4712 or me at (714) 263-9124, extension 505.

Sincerely,

Kathleen R. Williams
Project Manager
OHM Remediation



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 30, 1997

Mr. Duane Rollefson
Southwest Division
Naval Facilities Engineering Command
1420 Kettner Boulevard, Suite 507
San Diego, CA. 92101-2404

TRANSMITTAL OF PLAN OF ACTION, BUILDING 128,
LONG BEACH NAVAL COMPLEX, LONG BEACH, CALIFORNIA

Dear Mr. Rollefson:

The United States Environmental Protection Agency has reviewed the above mentioned document dated December 23, 1997. We also discussed the workplan with the Navy during a meetings held in November and December, 1997. While the Plan of Action is generally acceptable, please include a statement regarding what will occur if the confirmatory sampling finds concentrations of contaminants above the PRGs and risk based cleanup goals. This may be covered in para.5,pg 2 of this document.

By clarifying the above comment we have no objection to the workplan. Please notify me of the actual sampling date so we can be present during the excavation. If you have questions regarding this letter, please feel free to call me at any time at (415) 744-2388.

Sincerely,

Martin Hausladen,
RPM